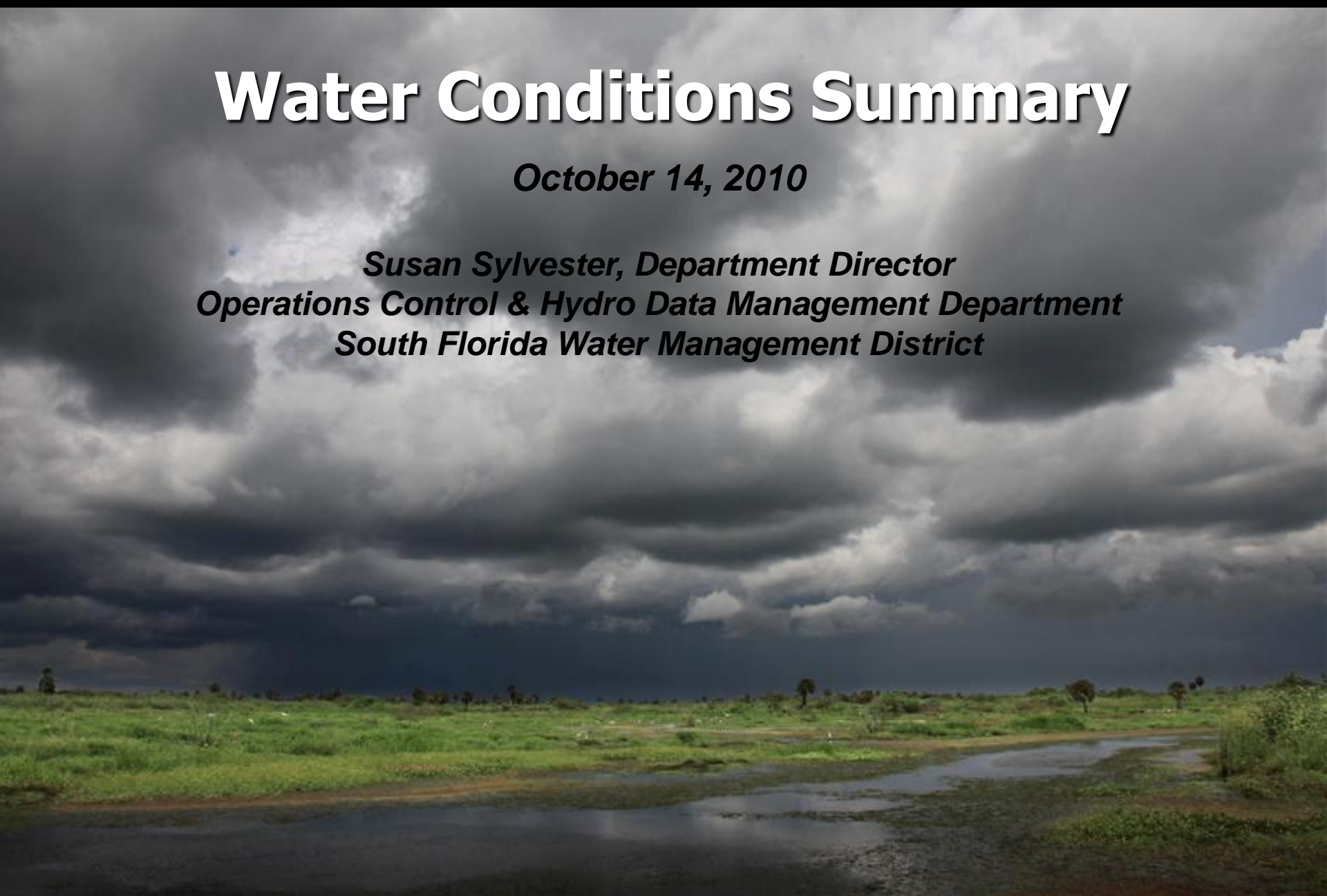
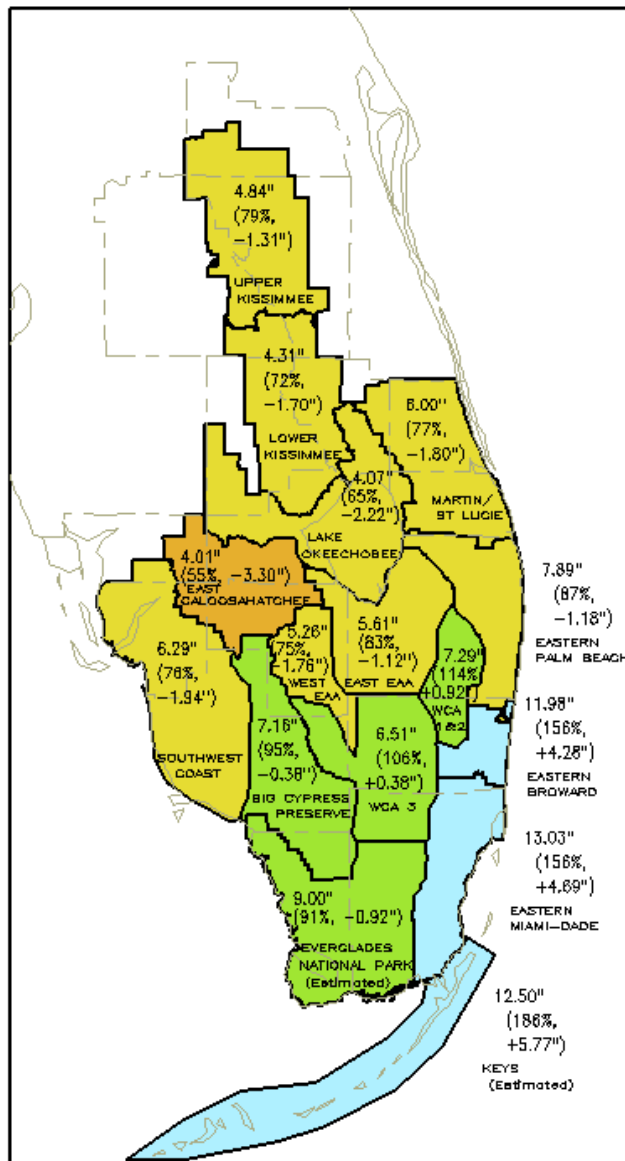


Water Conditions Summary

October 14, 2010

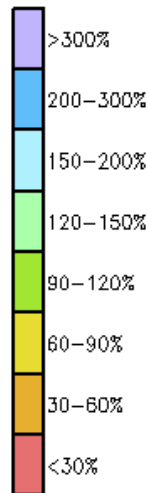
*Susan Sylvester, Department Director
Operations Control & Hydro Data Management Department
South Florida Water Management District*





DISTRICT-WIDE: 6.23" (88%, -0.82")

GRADS: COLA/IGES



Measured
(% of Avg.
Diff From Avg)



SFWMD 2010 September Rainfall Sept 2 – Oct 1

**DISTRICT-WIDE:
6.23" (88%, - 0.82")**

- Most basins received below average rainfall
- Few exceptions: Keys (186%), Eastern Miami Dade (156%), WCAs (114% for 1 and 2 and 106% for 3)
- Lower Kissimmee and Lake O. received less than 75% of average

TS NICOLE 3 days RAINFALL



SFWMD RAINDAR 3-DAY RAINFALL ESTIMATES

FROM: 0515 EST, 09/27/2010 THROUGH: 0515 EST, 09/30/2010

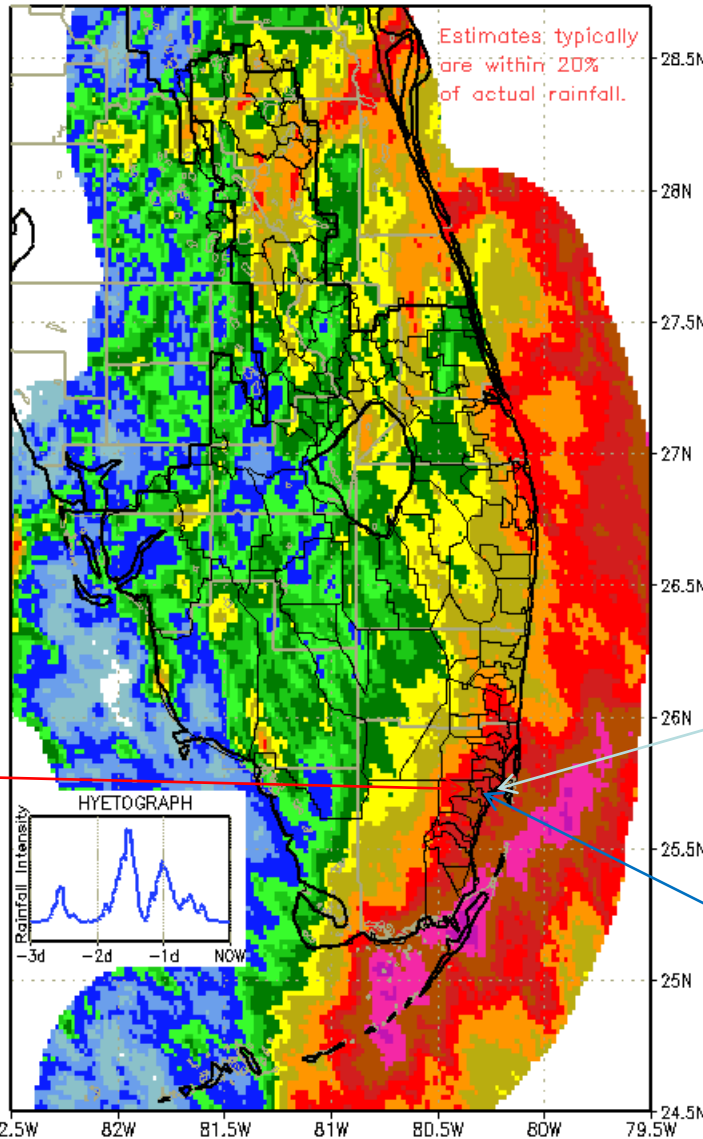
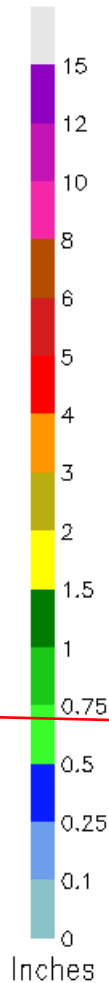
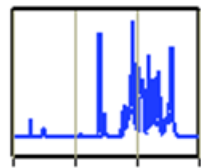
9/27 to 09/30

AREA_B_NORTH

Max: 5.110"

Avg: 3.691"

Vol: 9702 cfs-days



DISTRICT-WIDE RAINFALL ESTIMATE: 1.710"

Estimates; typically
are within 20%
of actual rainfall.

C-6

Max: 6.910"

Avg: 5.577"

Vol: 4421 cfs-days



S-25B

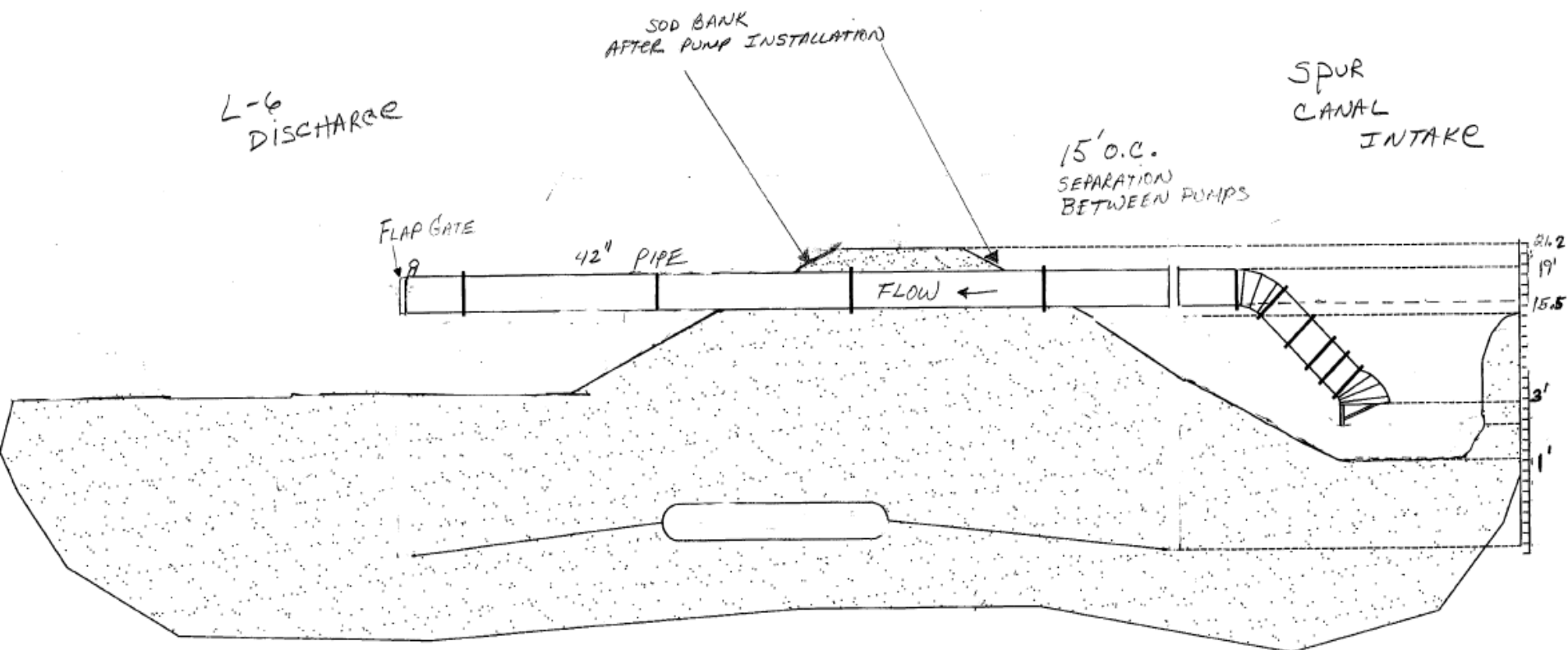
Max: 6.420"

Avg: 5.548"

Vol: 3009 cfs-days



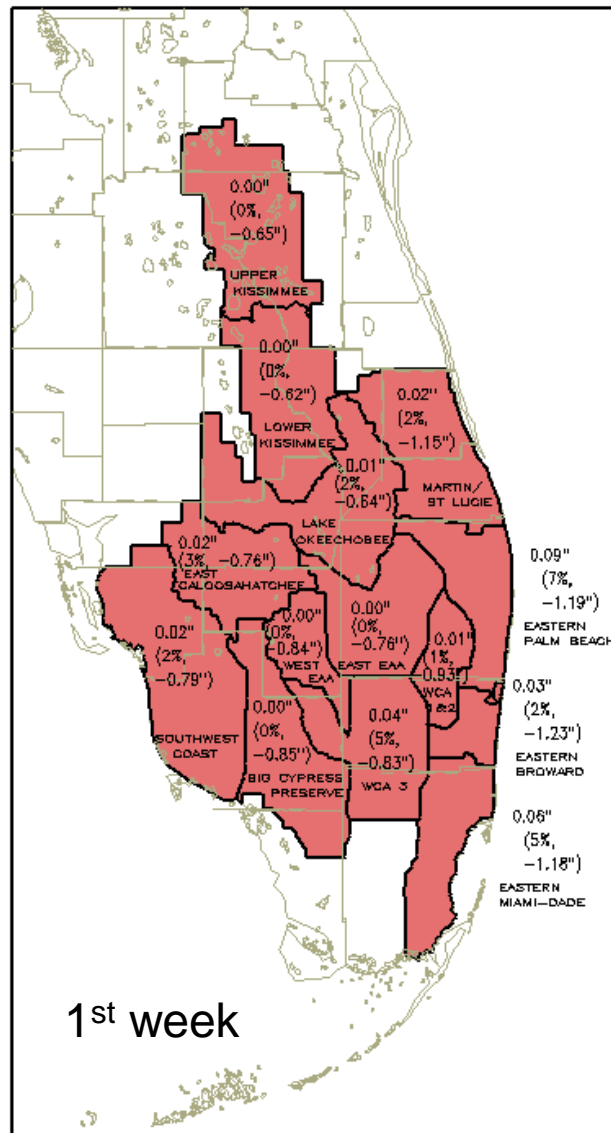
S-6 TEMPORARY
PUMP INSTALLATION



NOT TO SCALE

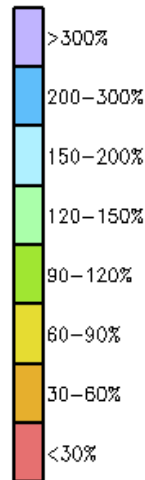
SFWMD Rainfall
02-OCT-2010 to 08-OCT-2010

Almost no rainfall the first 10 days of October



DISTRICT-WIDE: 0.02" (2%, -0.83")

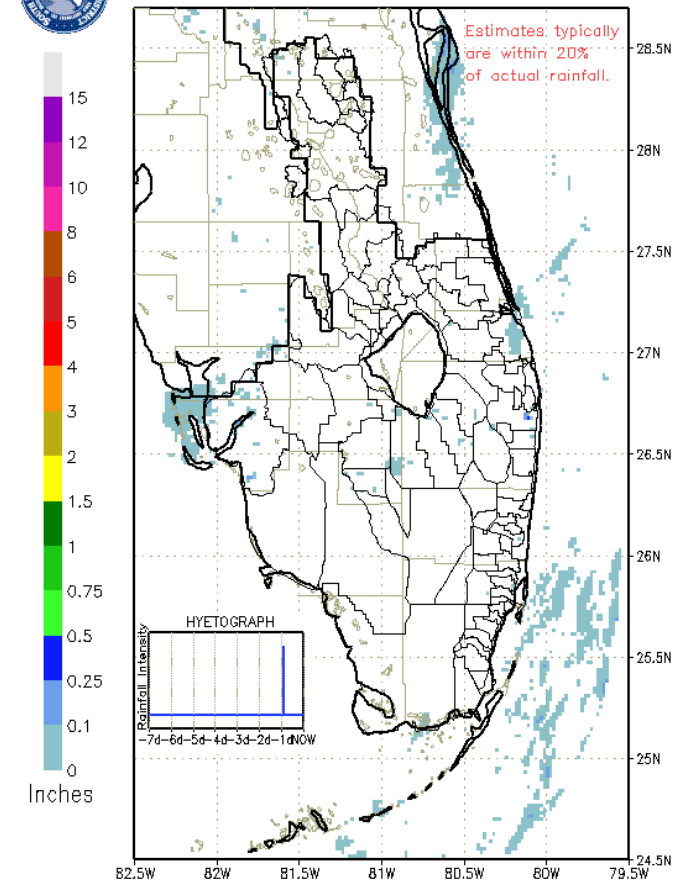
GRADS: COLA/IGES



2010-10-10-15:02



SFWMD RAINDAR 7-DAY RAINFALL ESTIMATES
FROM: 0515 EST, 10/04/2010 THROUGH: 0515 EST, 10/11/2010

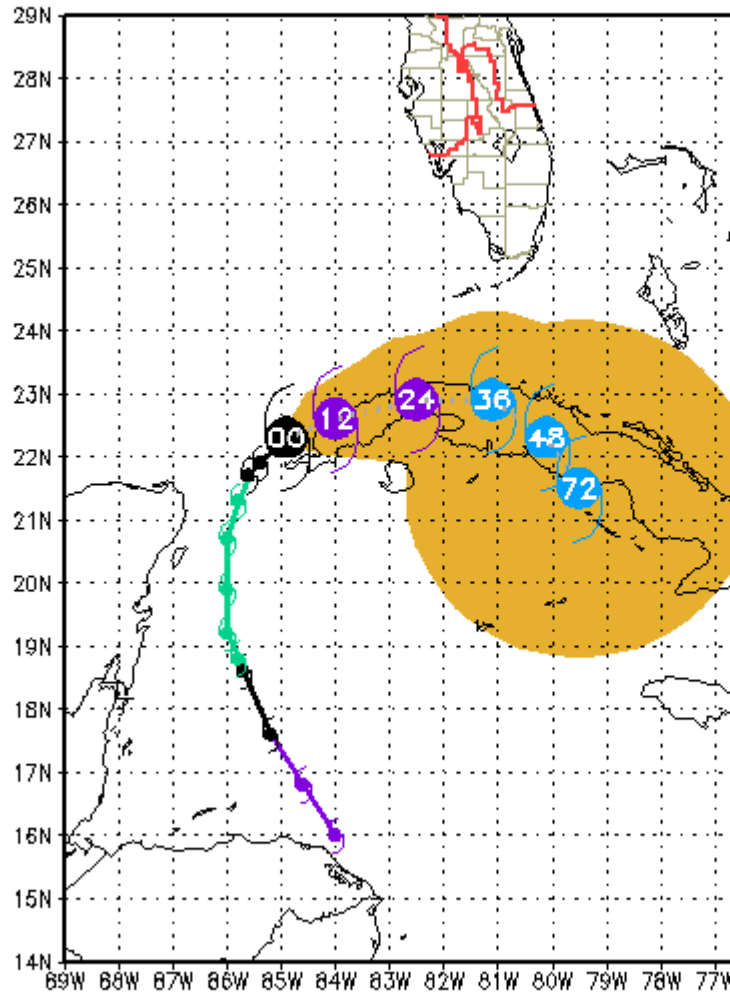


Tropical Status – Hurricane Paula



National Hurricane Center Forecast Track And Storm Motion During Previous 72 Hours

Plot Generated: Thu – Oct 14, 2010 – 1300 UTC (–4 for EDT)



PAULA REMAINS A SMALL HURRICANE. HURRICANE FORCE WINDS EXTEND OUTWARD UP TO 10 MILES...20 KM...FROM THE CENTER...AND TROPICAL STORM FORCE WINDS EXTEND OUTWARD UP TO 50 MILES...85 KM. THE WEATHER STATION LOCATED IN THE WESTERN TIP OF CUBA RECENTLY REPORTED A 60 MPH...97 KM/HR WIND GUST.

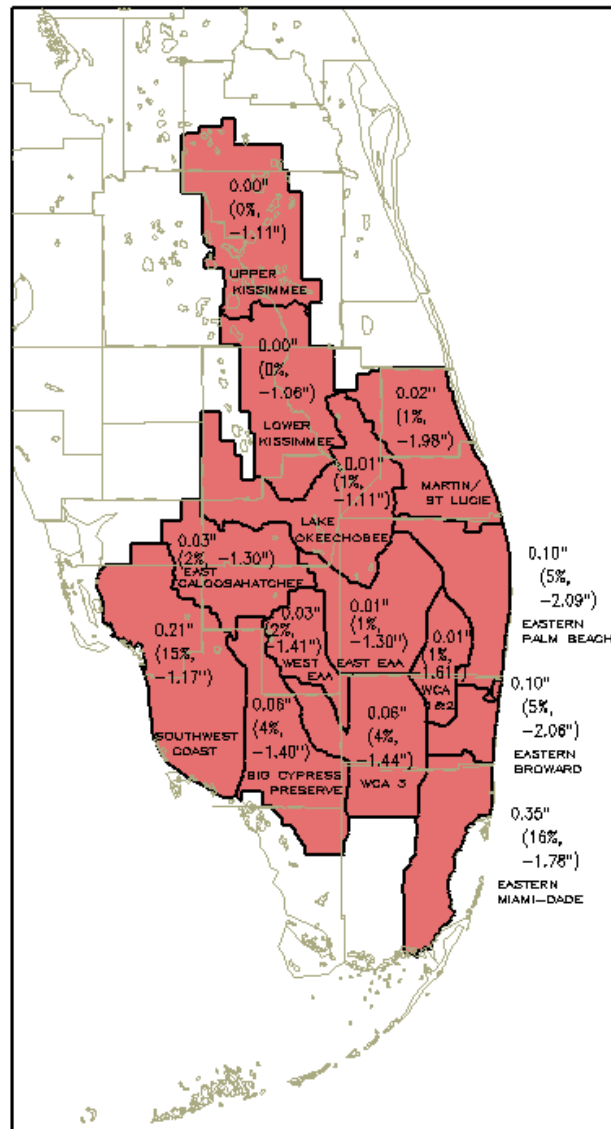
H PAULA	Hour	Date/Time
	000	14/0900Z
	012	14/1800Z
	024	15/0600Z
	036	15/1800Z
	048	16/0600Z
	072	17/0600Z RD

GrADS: COLA/IGES

Tropical Depression	Tropical Storm	CAT 1 Hurricane	CAT 2 Hurricane	CAT 3 Hurricane	CAT 4 Hurricane	CAT 5 Hurricane	Tropical Cyclone	Non-tropical Low	Historical Std Dev

SFWMD Rainfall

02-OCT-2010 to 13-OCT-2010



DISTRICT-WIDE: 0.07" (5%, -1.39")

GRADS: COLA/IGES

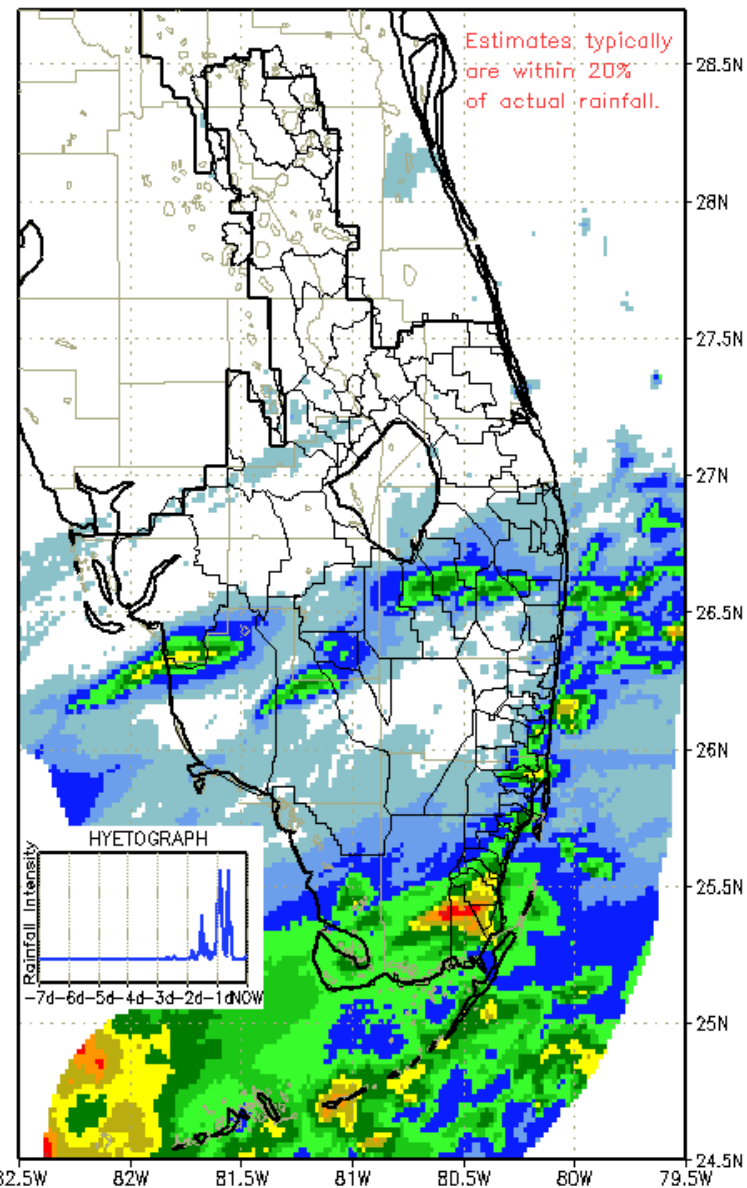
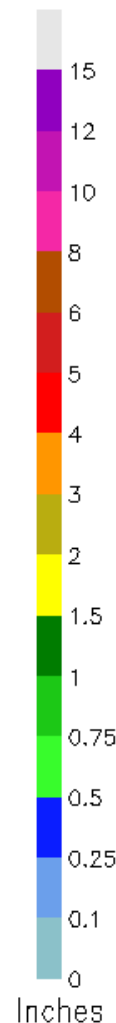
2010-10-13-19:02

Measured
(% of Avg,
Diff From Avg)



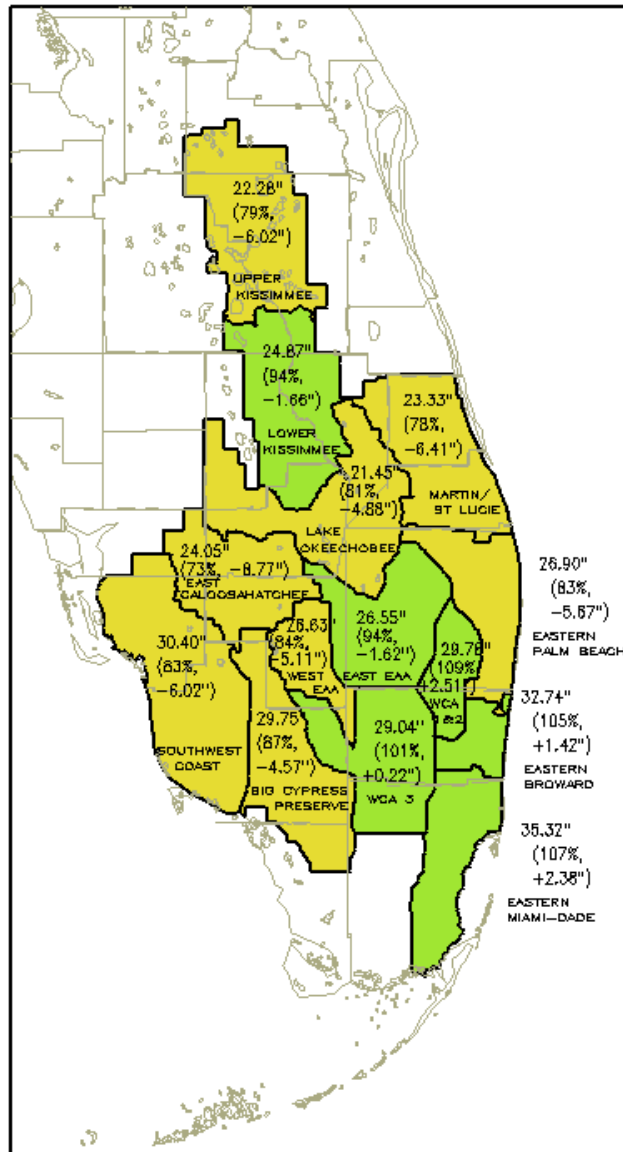
SFWMD RAINFALL 7-DAY RAINFALL ESTIMATES

FROM: 0515 EST, 10/07/2010 THROUGH: 0515 EST, 10/14/2010



DISTRICT-WIDE RAINFALL ESTIMATE: 0.118"

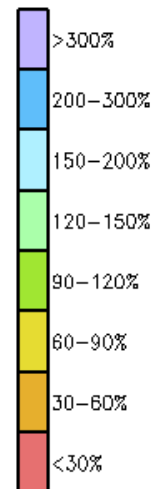
SFWMD Rainfall
02-JUN-2010 to 08-OCT-2010



DISTRICT-WIDE: 26.78" (88%, -3.52")

SFWMD 2010 Wet Season Rainfall Jun 2 – Oct 08

DISTRICT-WIDE: 26.78"
(88% of Avg, or -3.52")



Measured
<% of Avg,
Diff From Avg)



1976-2005 Averages
Jun: 8.03"
Jul: 6.83"
Aug: 7.54"
Sep: 7.05"
Oct: 3.76"
Wet Season: 33.21"

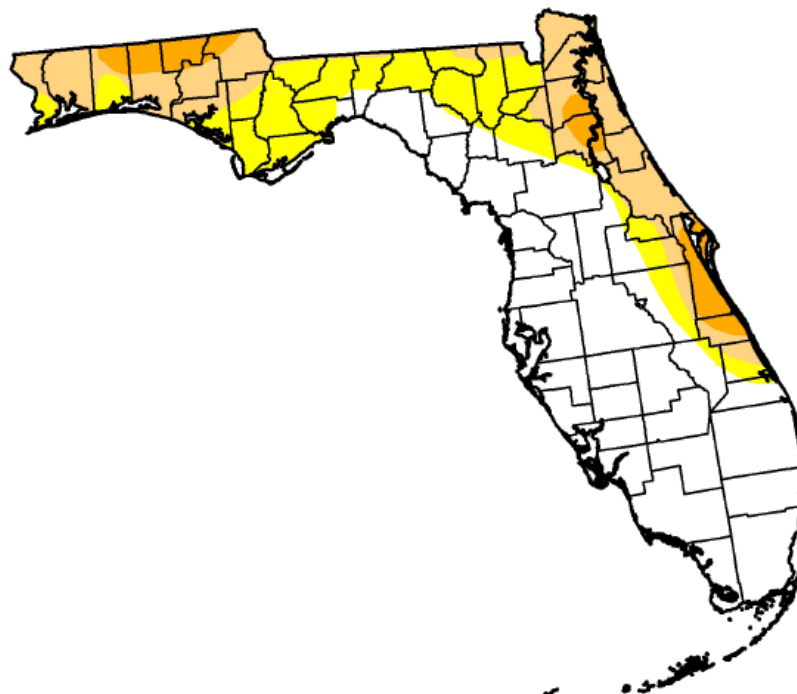
U.S. Drought Monitor

Florida

October 5, 2010

Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	55.1	44.9	25.4	6.0	0.0	0.0
Last Week (09/28/2010 map)	55.0	45.0	18.0	4.2	0.0	0.0
3 Months Ago (07/13/2010 map)	95.5	4.5	0.0	0.0	0.0	0.0
Start of Calendar Year (01/05/2010 map)	97.3	2.7	0.0	0.0	0.0	0.0
Start of Water Year (10/05/2010 map)	55.1	44.9	25.4	6.0	0.0	0.0
One Year Ago (10/06/2009 map)	100.0	0.0	0.0	0.0	0.0	0.0



Intensity:

 D0 Abnormally Dry	 D3 Drought - Extreme
 D1 Drought - Moderate	 D4 Drought - Exceptional
 D2 Drought - Severe	

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://drought.unl.edu/dm>



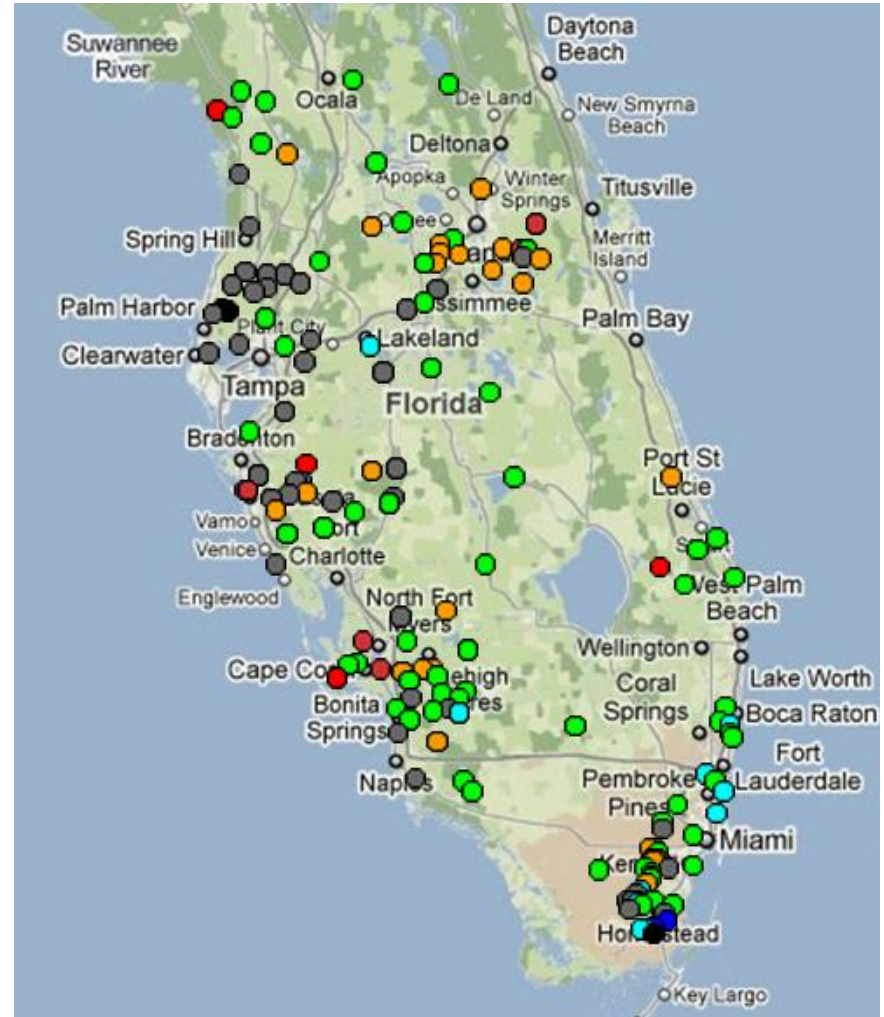
Released Thursday, October 7, 2010

Author: Laura Edwards, Western Regional Climate Center

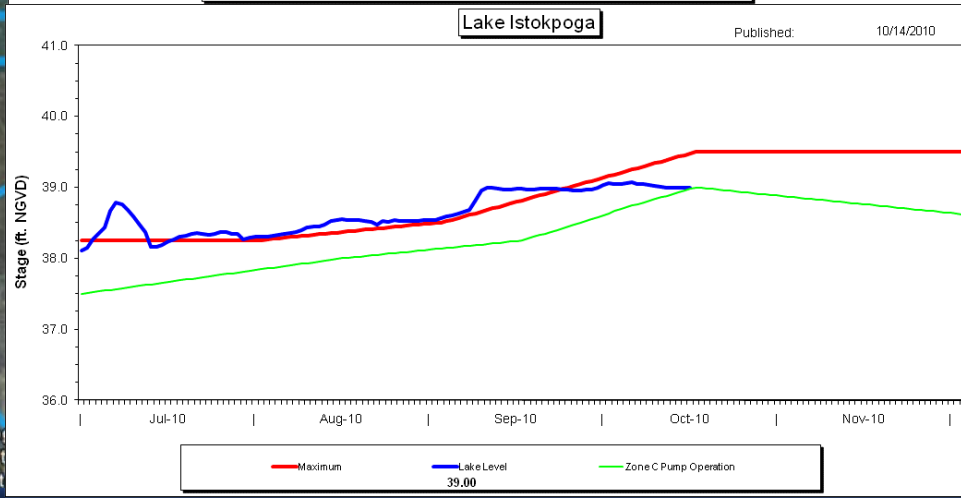
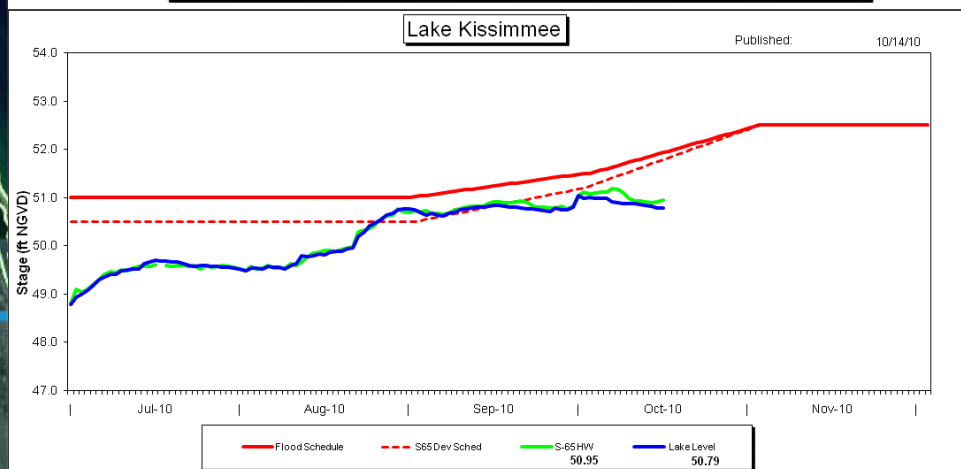
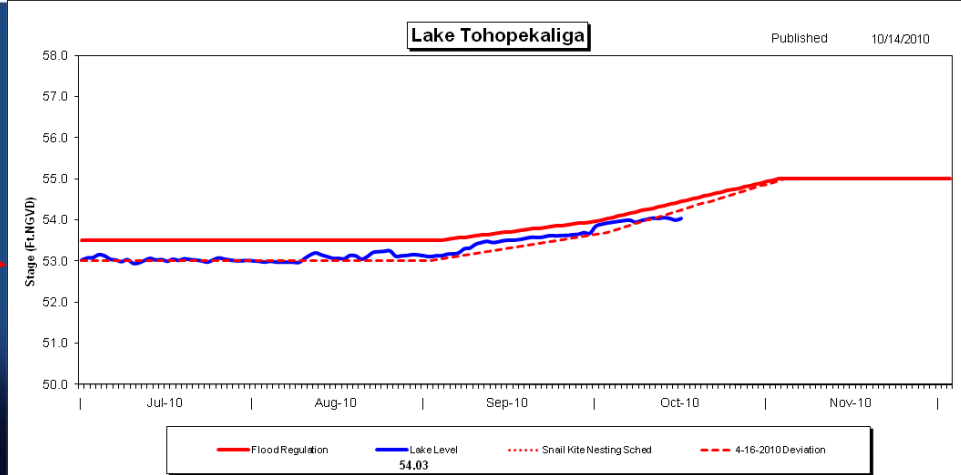
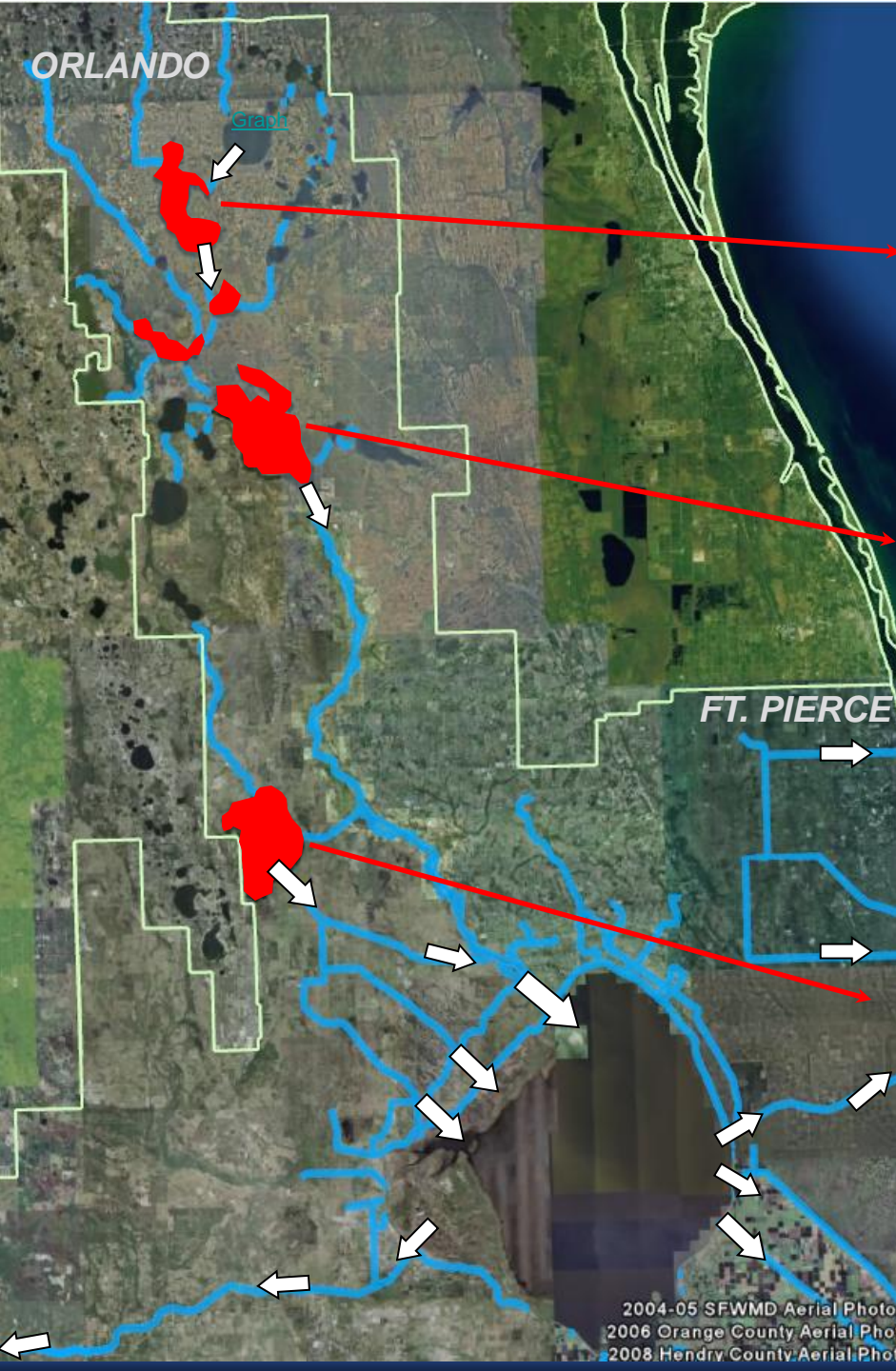
Groundwater Levels & Water Supply Status

- Kissimmee Basin - mostly below normal
- Upper East Coast - near normal with few below normal
- Lower East Coast - near normal, with few above normal
- Lower West Coast - mostly either normal or below normal

Water levels at selected sites in South Florida, based on PROVISIONAL DATA, as of Oct 08, 2010.

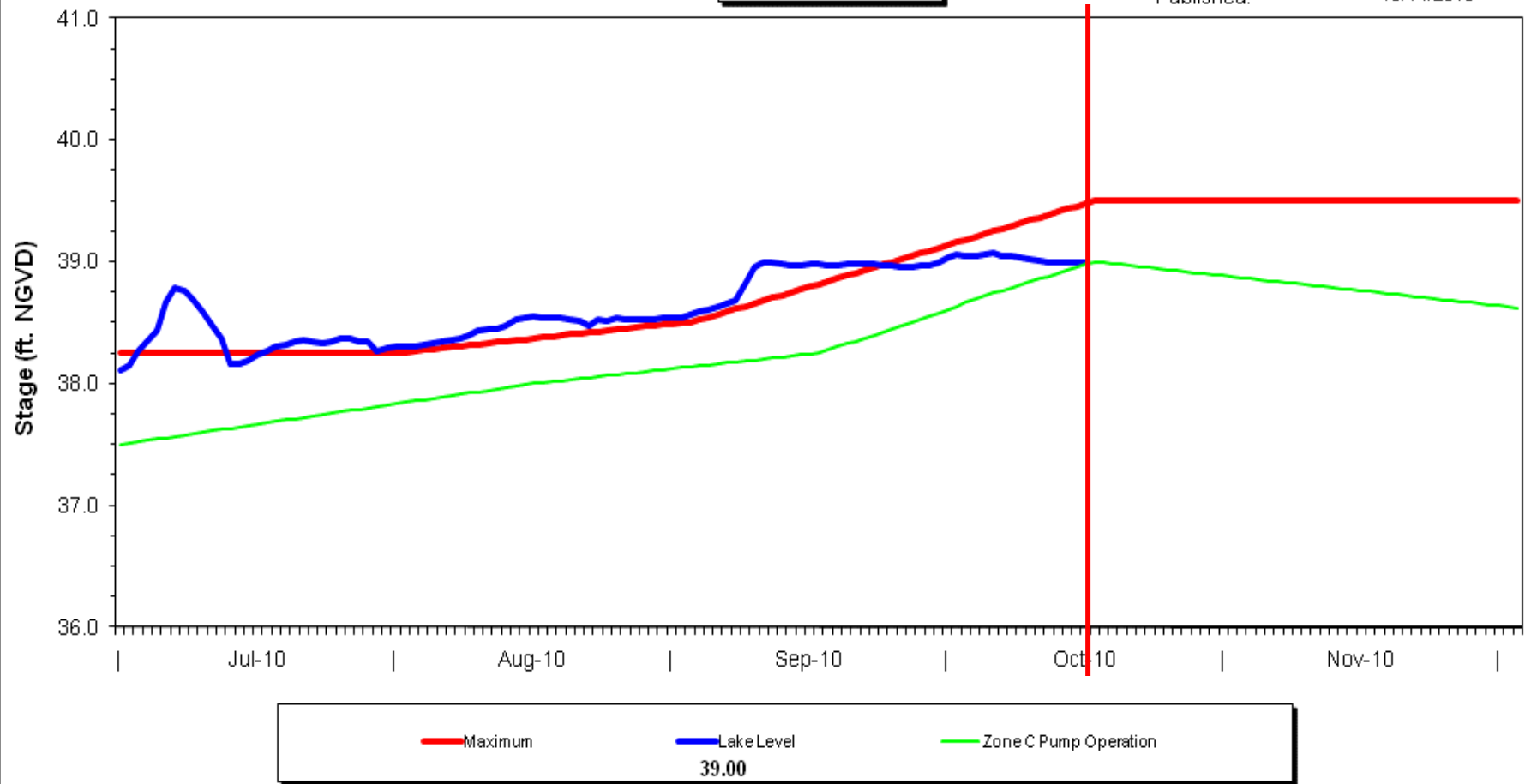


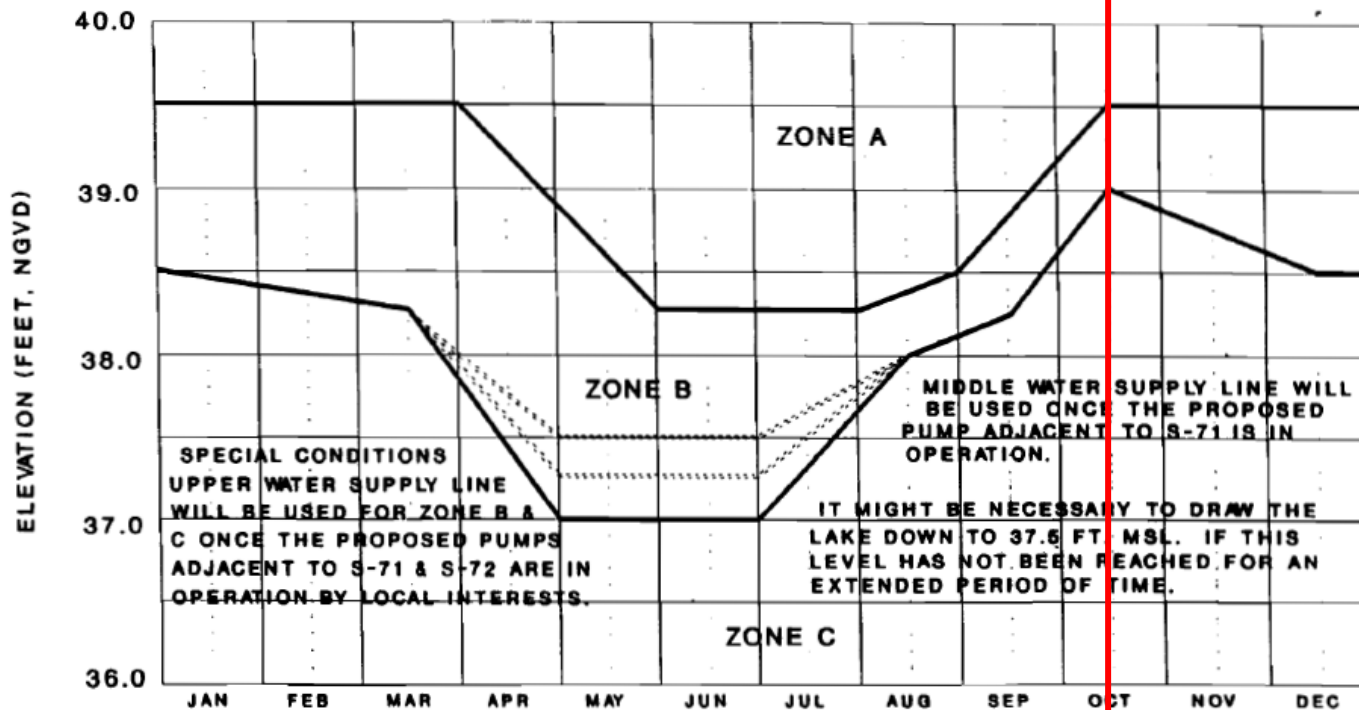
Explanation - Percentile classes (symbol color based on most recent measurement)							
●	●	●	●	●	●	●	●
New Low	<10	10-24	25-75	76-90	>90	New High	Not Ranked
	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal		



Lake Istokpoga

Published: 10/14/2010





ZONE	RELEASES
A	REGULATORY RELEASES MADE THROUGH ALL OUTLETS: S-68 FIRM CAPACITY 3,000 CFS S-68 SECONDARY CAPACITY UP TO 5,900 CFS ISTOKPOGA CANAL CAPACITY UP TO 800 CFS
•B	WATER SUPPLY RELEASE MADE IF NEEDED
•C	NO RELEASES MADE

**CENTRAL AND SOUTHERN FLORIDA
KISSIMMEE RIVER BASIN**

REGULATION SCHEDULE

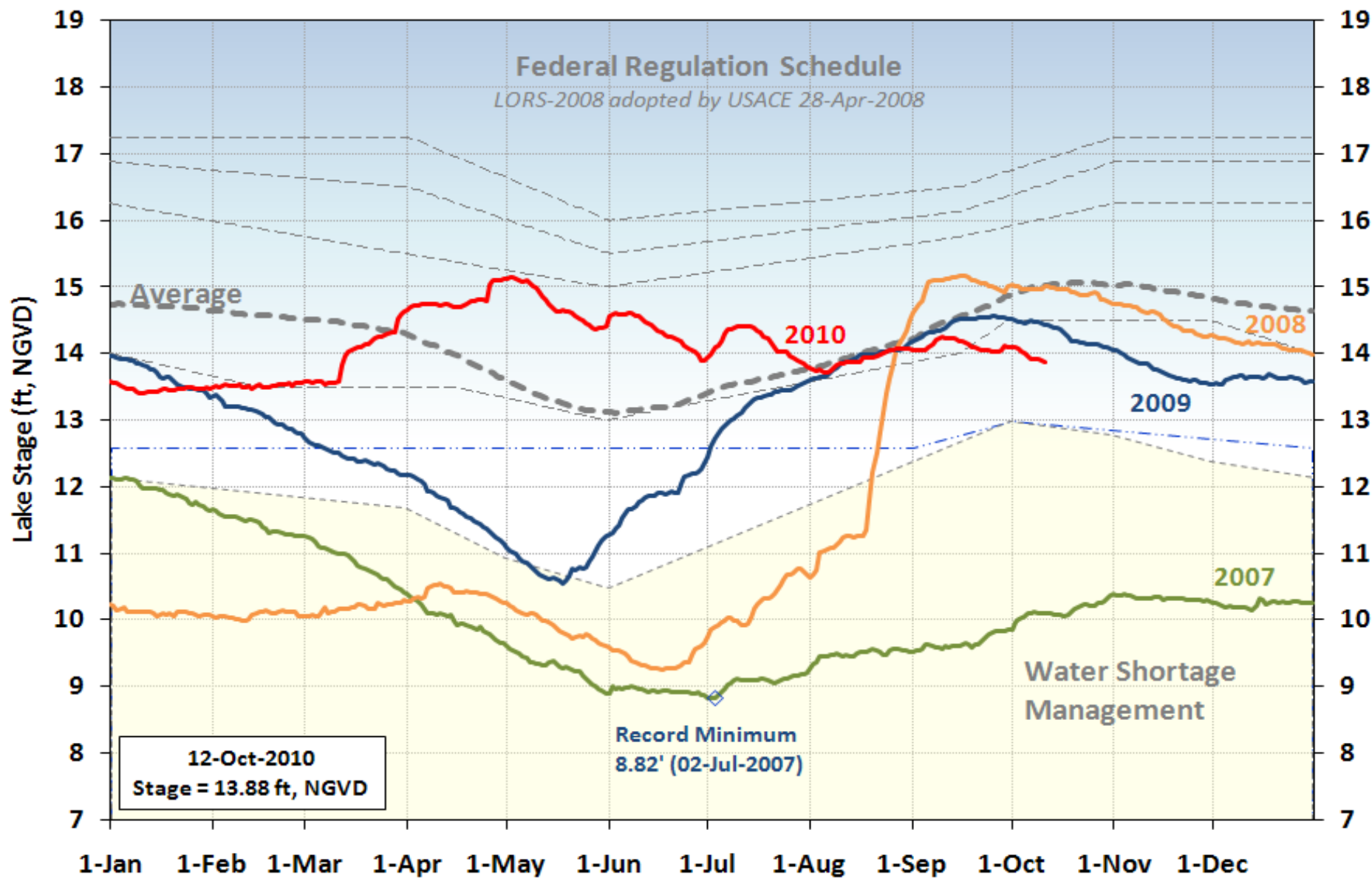
LAKE ISTOKPOGA

U S ARMY ENGINEER DISTRICT JACKSONVILLE
CORPS OF ENGINEERS, JACKSONVILLE, FLA

DATED: MARCH 1999

Lake Okeechobee Stage Hydrograph Comparison

--- Average (1965-2007) 2007 2008 2009 2010



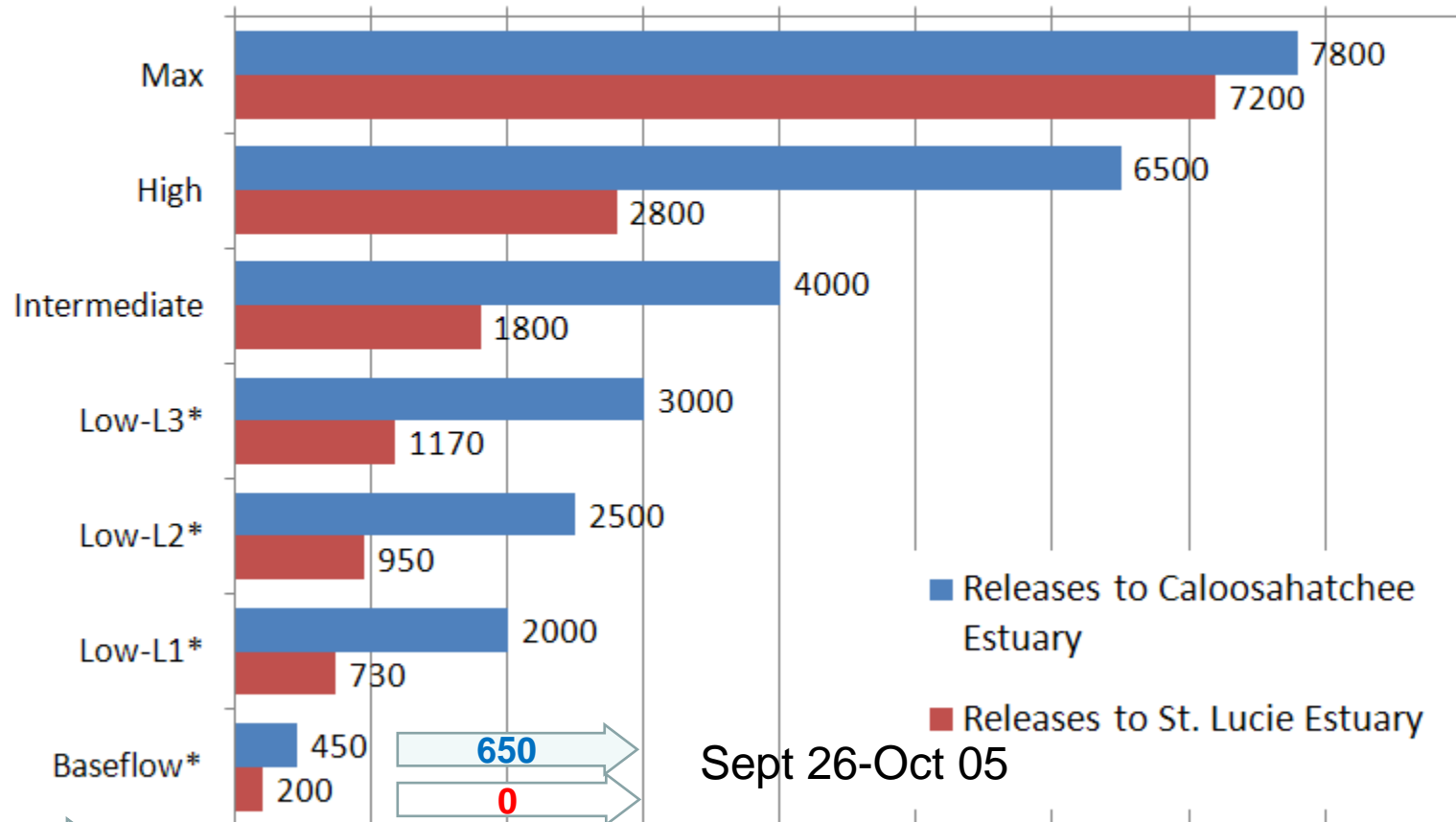
Current Release Rates

Lake Okeechobee Regulation Schedule 2008

Release Rates (cfs)

0 1000 2000 3000 4000 5000 6000 7000 8000 9000

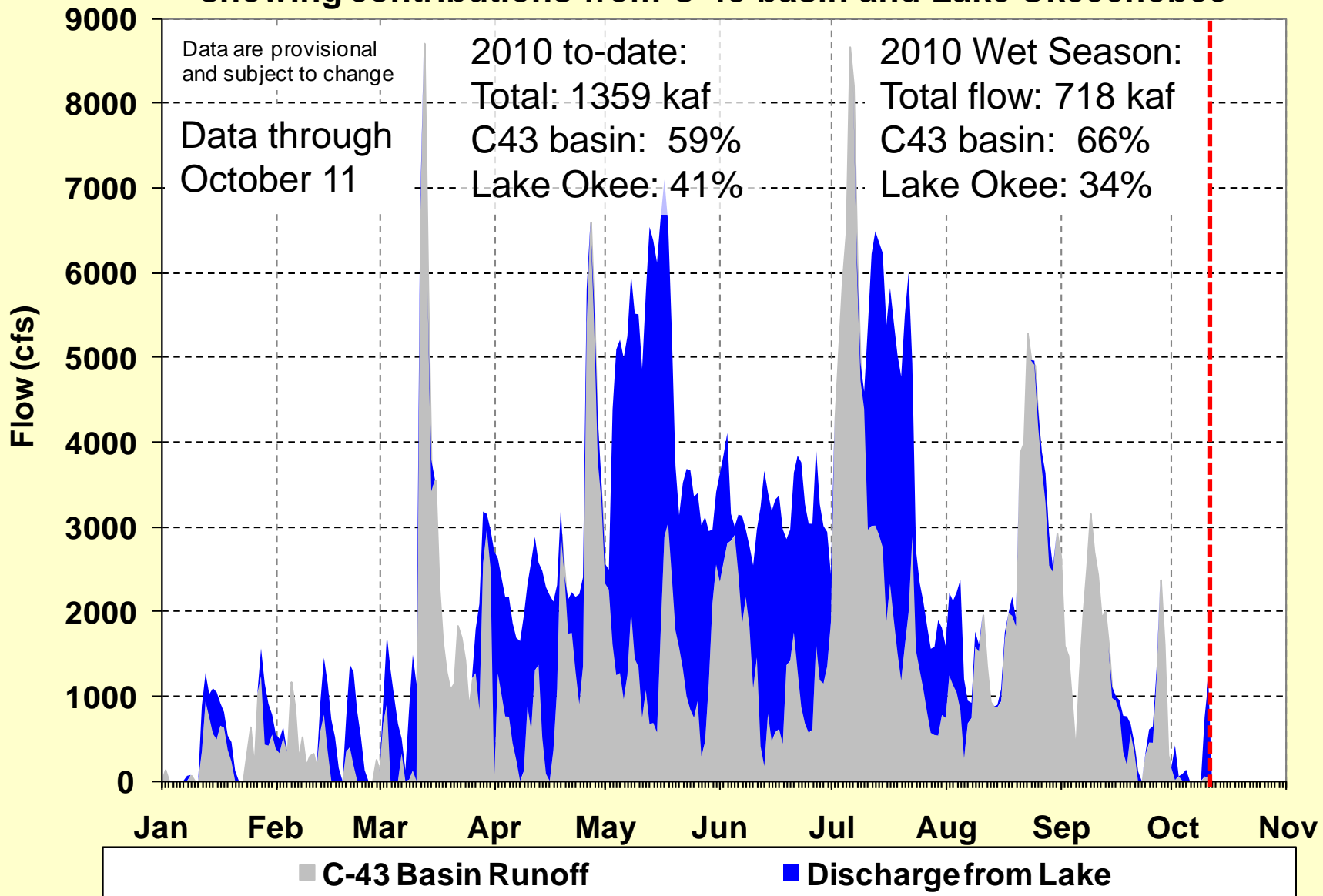
LORS-08 Discharge Class



* Lake O Releases in the Baseflow & Low Subbands are limited by basin runoff

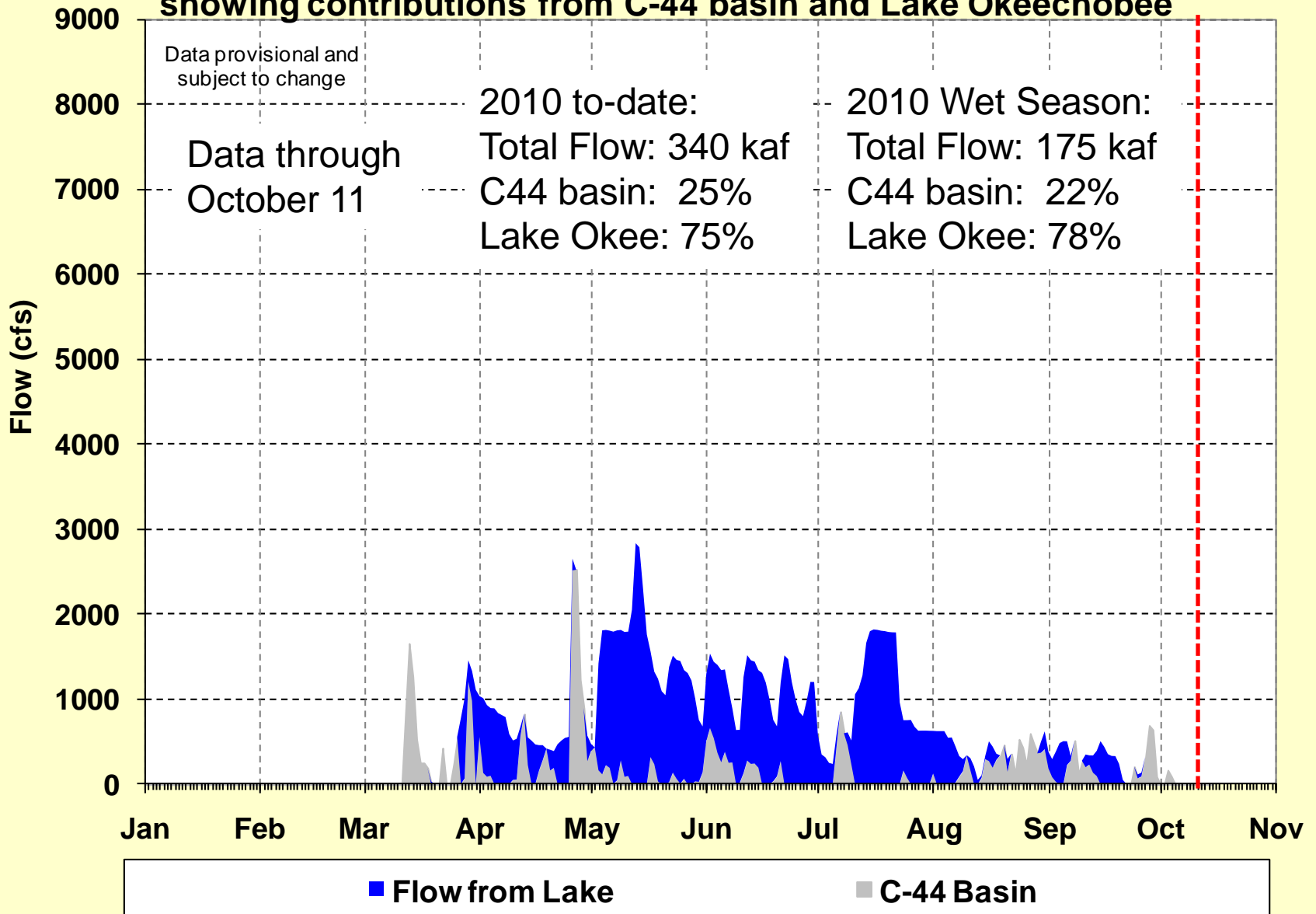
Total Flow From W.P. Franklin Lock and Dam (S-79)

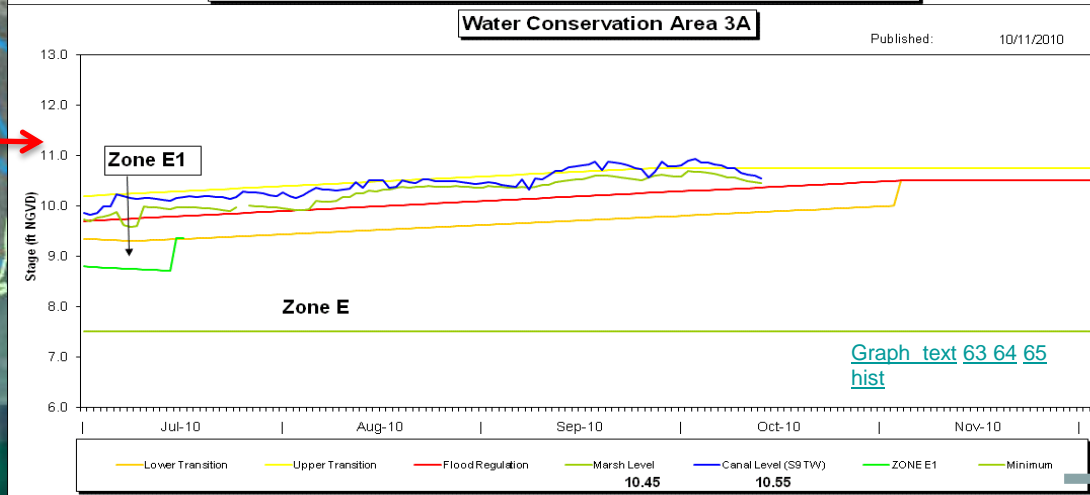
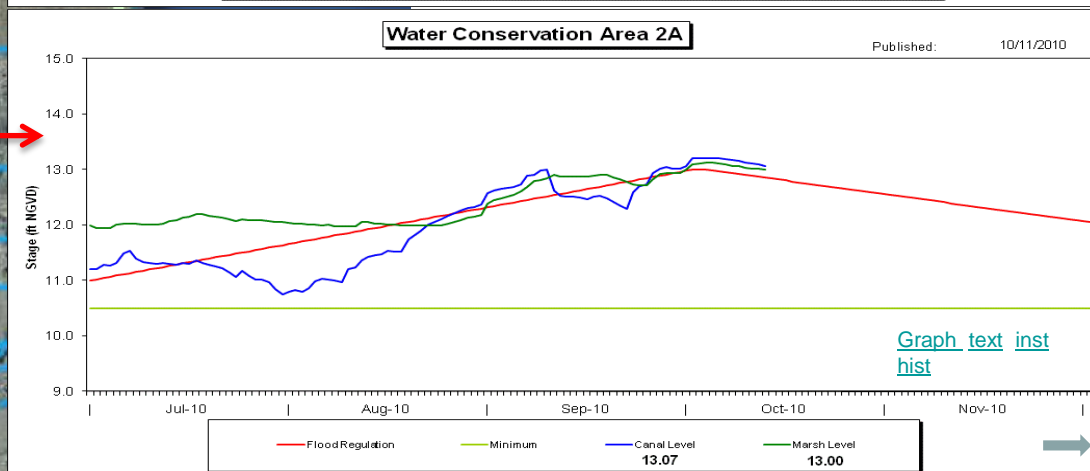
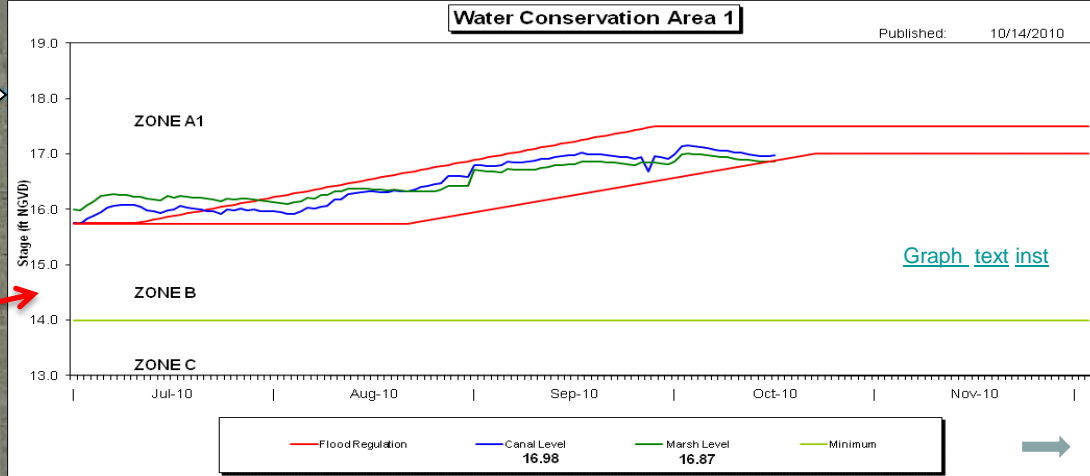
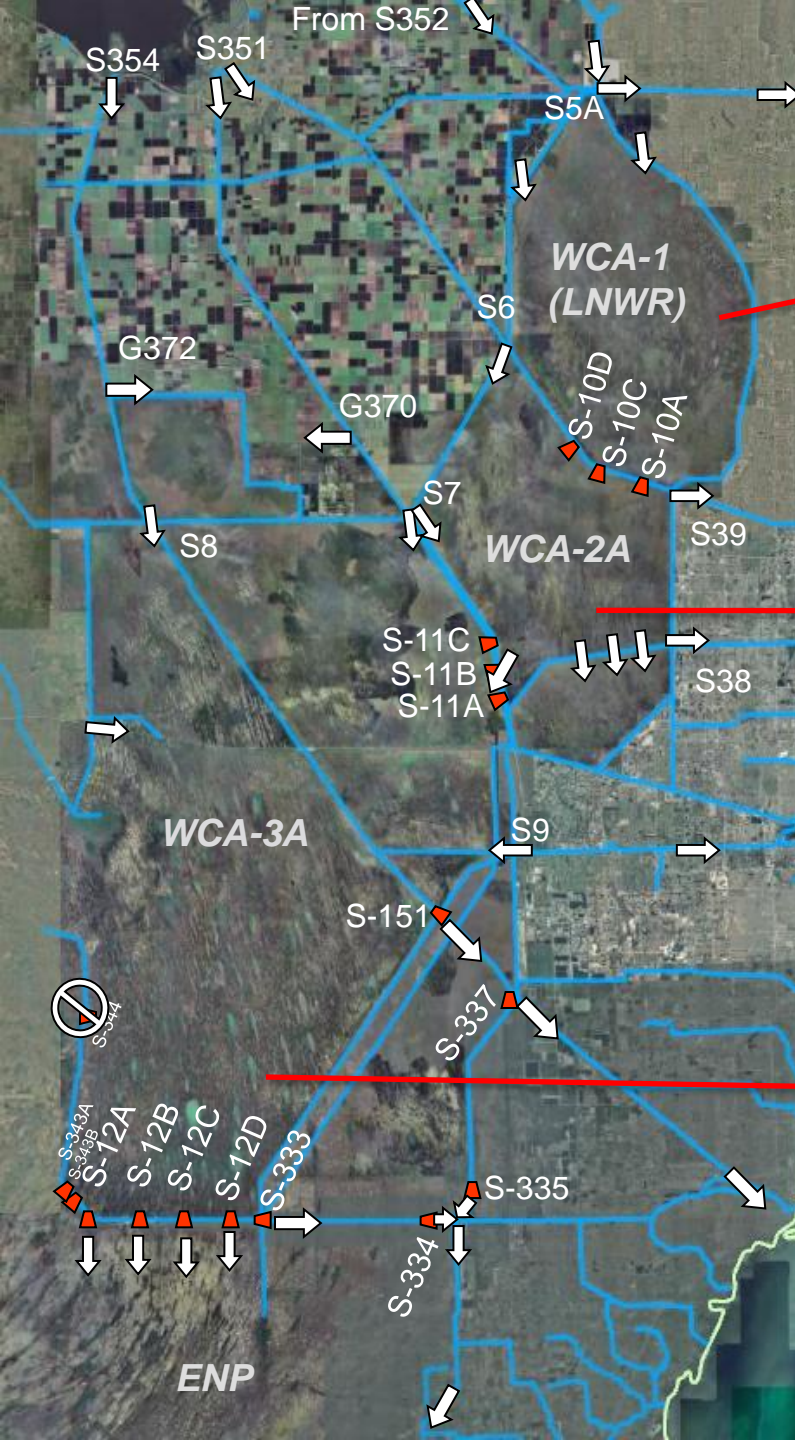
showing contributions from C-43 basin and Lake Okeechobee



Total Flow From St. Lucie Lock and Dam (S-80)

showing contributions from C-44 basin and Lake Okeechobee

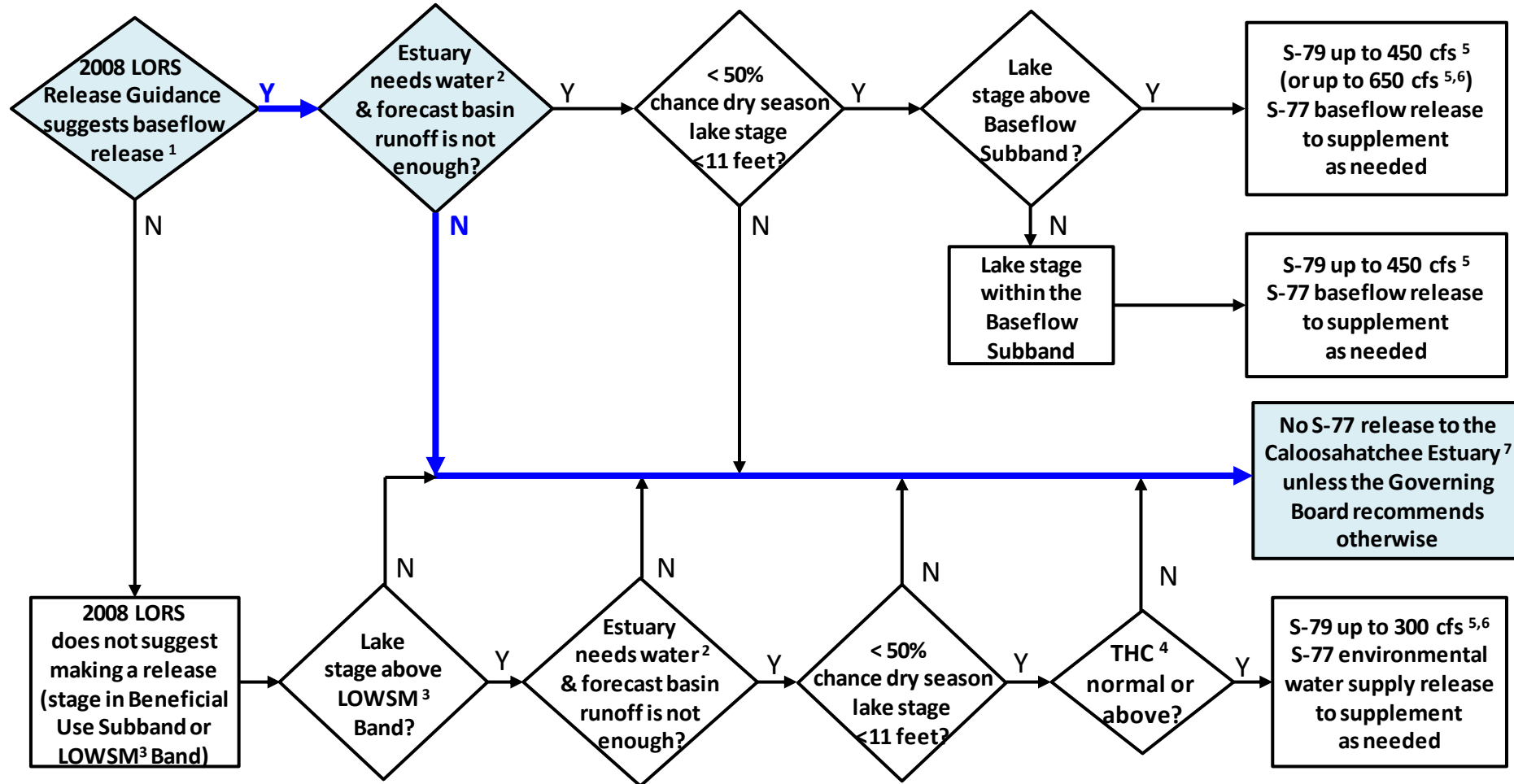




Lake Okeechobee Operations

- **USACE's Lake O Regulation Schedule (2008 LORS) continues to suggest baseflow releases**
 - **S-79: from 0 up to 450 cfs**
 - **S-80: from 0 up to 200 cfs**
- **SFWMD Lake O Adaptive Protocol implemented**
 - **Dry season began early**
 - **Release guidance suggests no baseflow releases to the Caloosahatchee Estuary**
 - **Estuary does not need water**
 - **Val I-75 30-day moving average salinity is forecast to remain below 5 psu for the next two weeks**
 - **Continuous monitoring and weekly recommendations to the USACE**

Flowchart to Guide Recommendations for Lake Okeechobee Releases to the Caloosahatchee Estuary for 2008 LORS Baseflow & for Environmental Water Supply



¹The 2008 LORS Release Guidance (Part D) can suggest baseflow releases in the Intermediate, Low, or Baseflow Subbands.

²Estuary “needs” water when the 30-day moving average salinity at I-75 bridge is projected to exceed 5 practical salinity units (psu) within 2 weeks.

³LOWSM = Lake Okeechobee Water Shortage Management.

⁴Tributary Hydrologic Condition (THC) is based on classification of Lake Okeechobee Net Inflow and Palmer Index.

⁵Can release less than the “up to” limit if lower release is sufficient to reach or sustain desired estuary salinity; cfs = cubic feet per second.

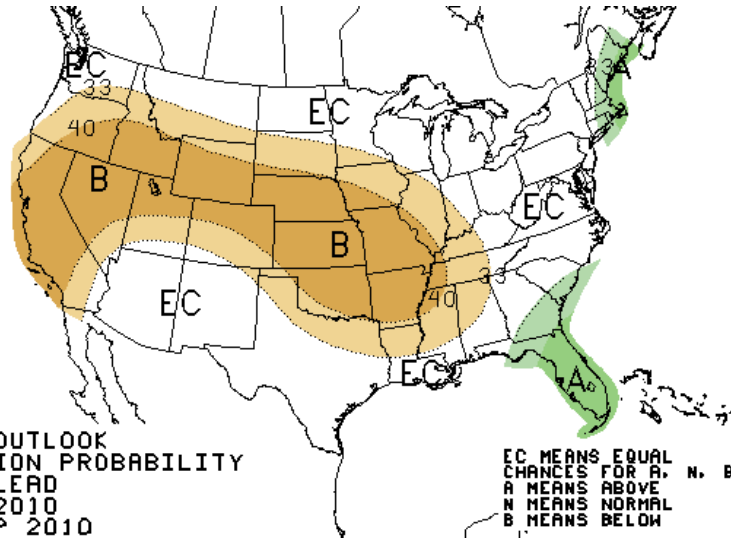
⁶After reviewing conditions in Water Conservation Areas (WCAs), Stormwater Treatment Areas (STAs), ENP, St. Lucie Estuary and Lake Okeechobee.

⁷Should this condition be reached, the Governing Board will be briefed at their next regularly scheduled meeting as part of the State of the Water Resources agenda item.

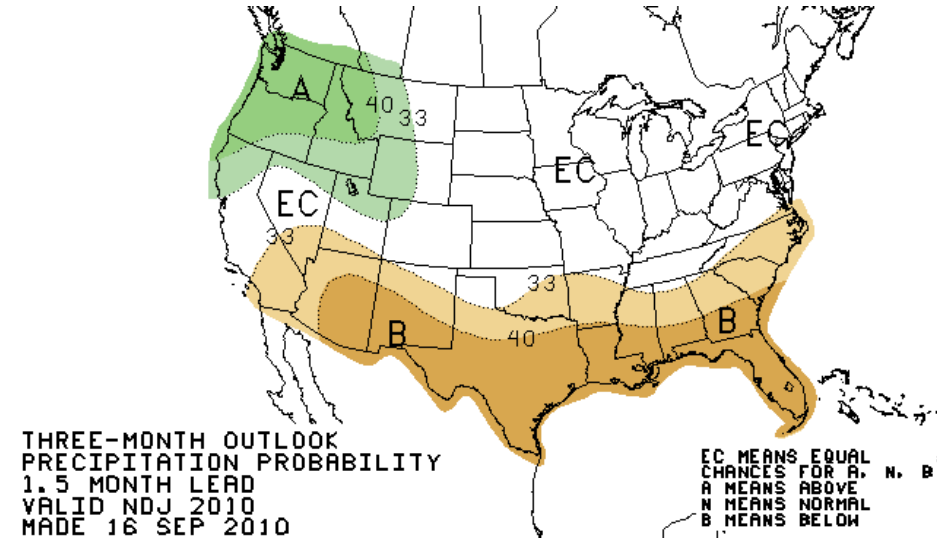
U. S. Seasonal Precipitation Outlook

National Climate Prediction Center (CPC)

October



Nov-Jan

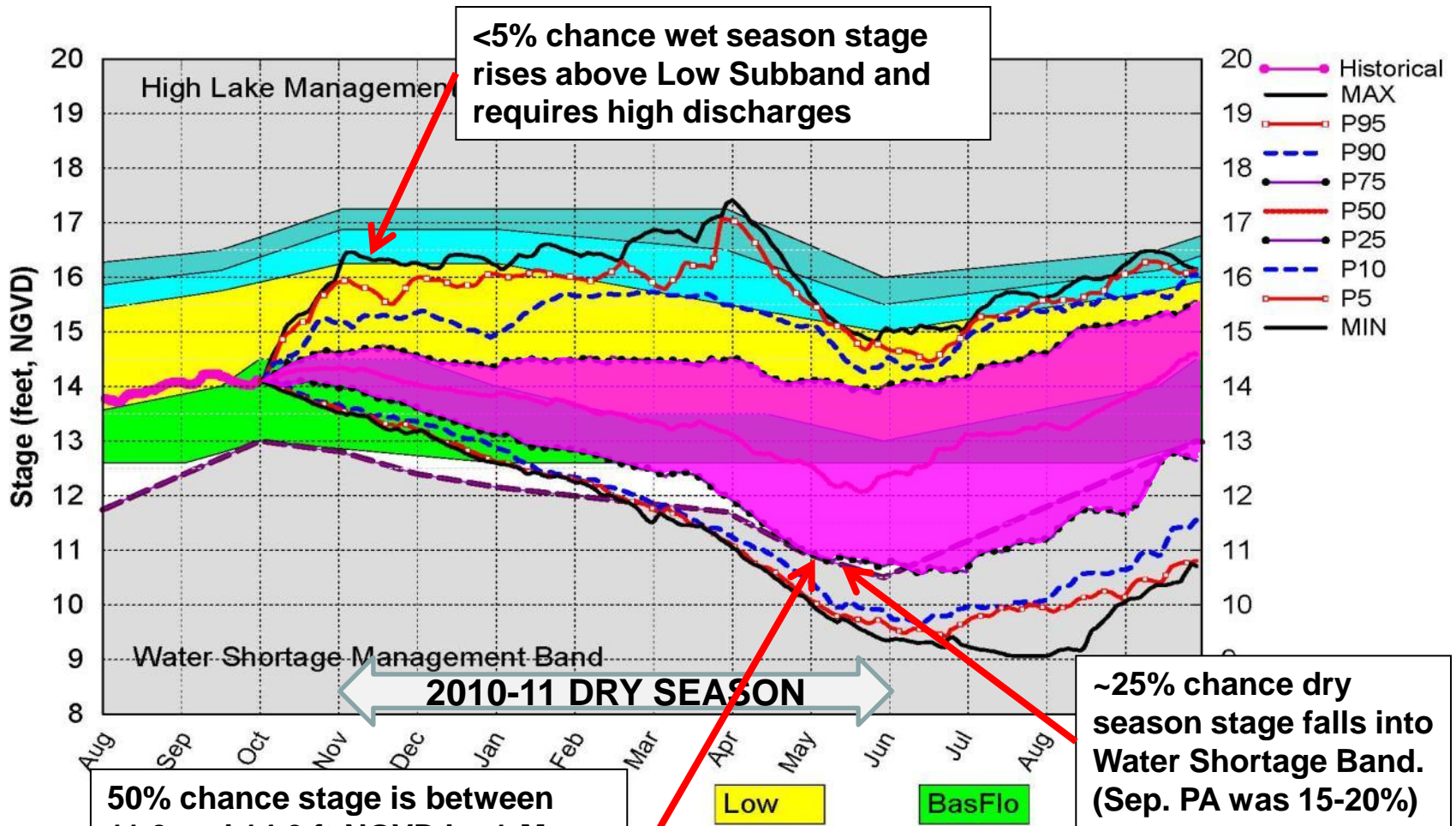


- La Nina conditions are expected to continue well into the 2010-2011 dry season.
- The current precipitation outlook for central and southern Florida is:
 - increased chance of above-normal (A) rainfall for October.
 - increased chance of below-normal (B) rainfall for Nov-Jan
 - increased chance of below-normal (B) rainfall for the entire 2010-11 dry season

Lake Okeechobee Stage Forecast

- **Future Lake stage depends on future rainfall**
- **Projections provided monthly by SFWMD Hydrologic and Environmental Systems Modeling (HESM) Department**
Don Ketprakong, Paul Trimble, Danielle Morancy, Luis Cadavid, Jayantha Obeysekera
- **Position Analysis**
 - **Each year starts with current hydrologic conditions**
 - **41 1-yr simulations of system response to historical rainfall conditions**
 - **Statistical summaries used to display projections**

Lake Okeechobee SFWMM October 2010 Position Analysis



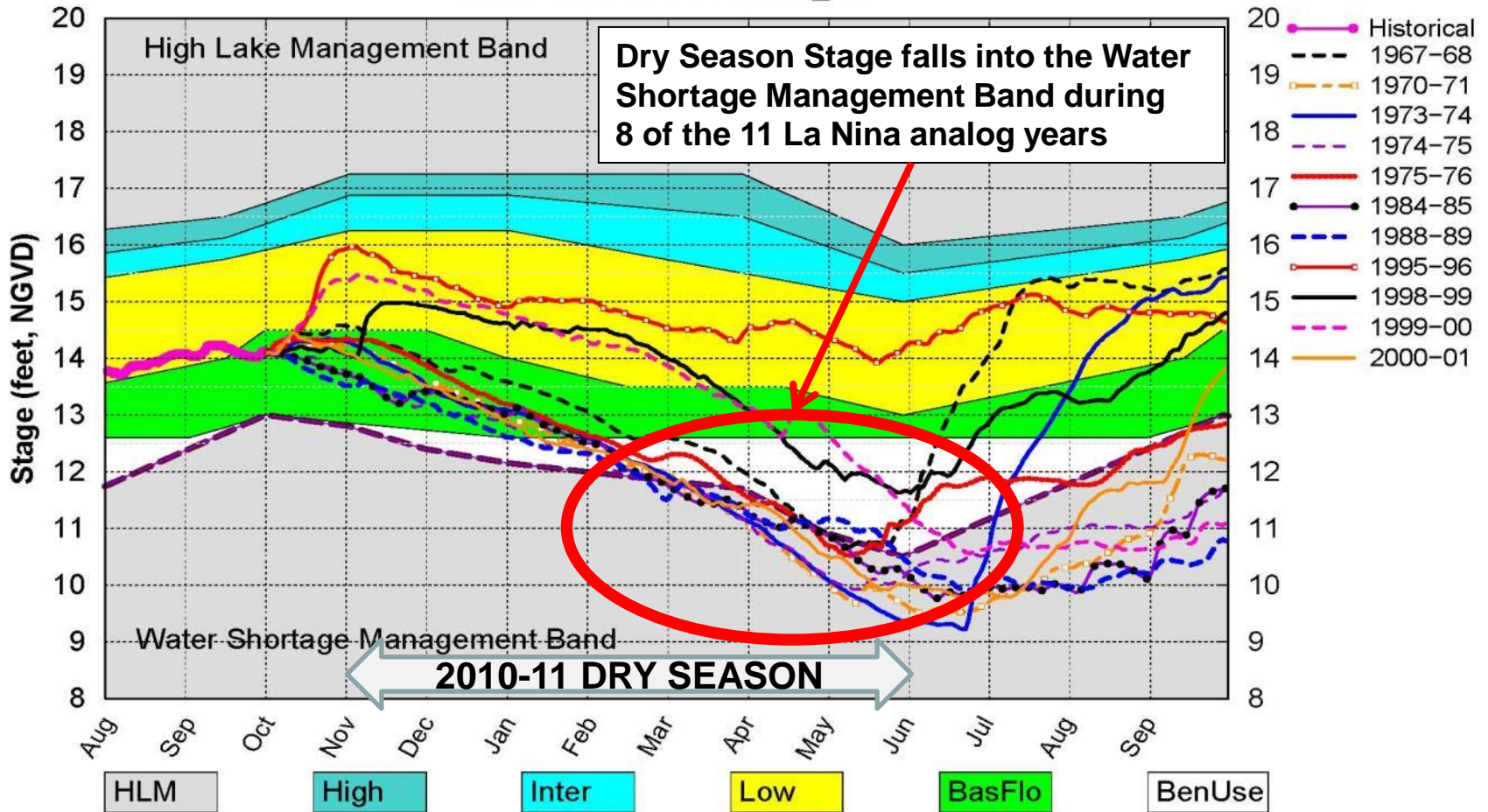
Tue Oct 5 09:

Most likely that stage will remain in Low Subband or Baseflow Subband for early dry season.

(Position Analysis Results website)

Lake Okeechobee SFWMM October 2010 Position Analysis

All La Nina Years Plot PA_V2



(See assumptions on the Position Analysis Results website)

Questions?

Looking Southwest across WCA-1

System-wide Water Conditions Summary

Kissimmee Basin - East Toho ~ 1 ft below schedule;
Lake Toho ~1/3 ft below schedule
Lake Kissimmee ~1 ft below schedule.

Lake Okeechobee - Lake Okeechobee is at 13.90, 1.2 ft below Period of Records Average and 0.55 ft below 2009 level, -0.17 ft below last week
Baseflow releases (0 cfs to St Lucie & 650 cfs to Caloo.) since Sept 26

Water Conservation Areas - WCA1 is about 0.52 ft below schedule
WCA2 is about 0.16 ft above schedule;
WCA3 is about 0.59 ft above schedule.

STAs - most cells are at target depths

Water Supply GW levels LEC near normal or above normal
UEC and BCB are normal or below normal -
Kissimmee mostly below normal

Rainfall - September Rainfall is below average 6.23" (88%; -0.82")
Oct. has increased chance of above average rainfall
Oct-Dec: increased chance of below average rainfall

2004-05 SFWMD Aerial Photography
2009 Monroe County Aerial Photography

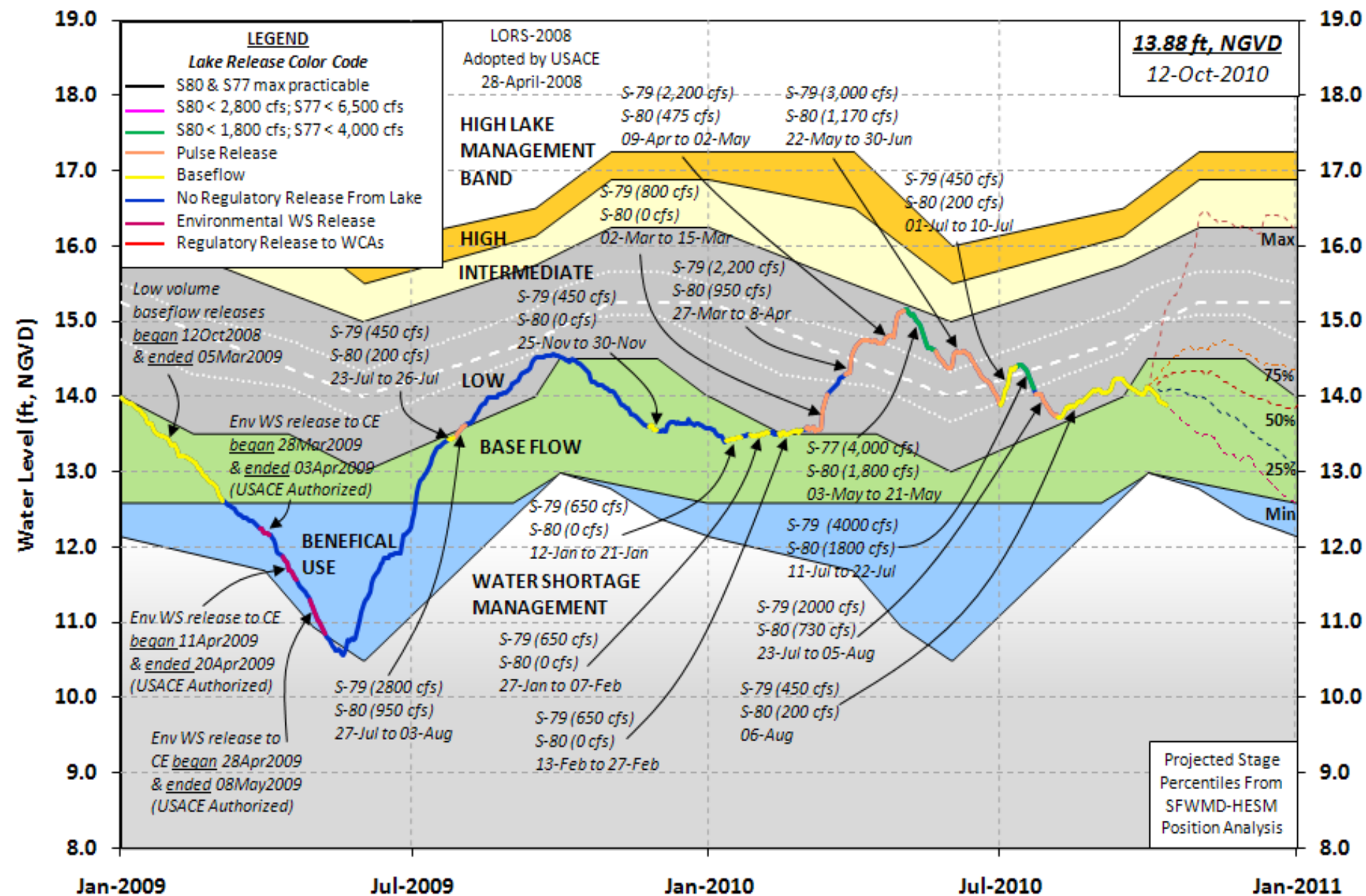
Climate - LaNina is present in Equatorial Pacific

Pointer 25°49'58.25" N 78°05'25.28" W

Streaming ||||| 100%

Eye

Lake Okeechobee Water Level History and Projected Stages



2010 Lake O Release History

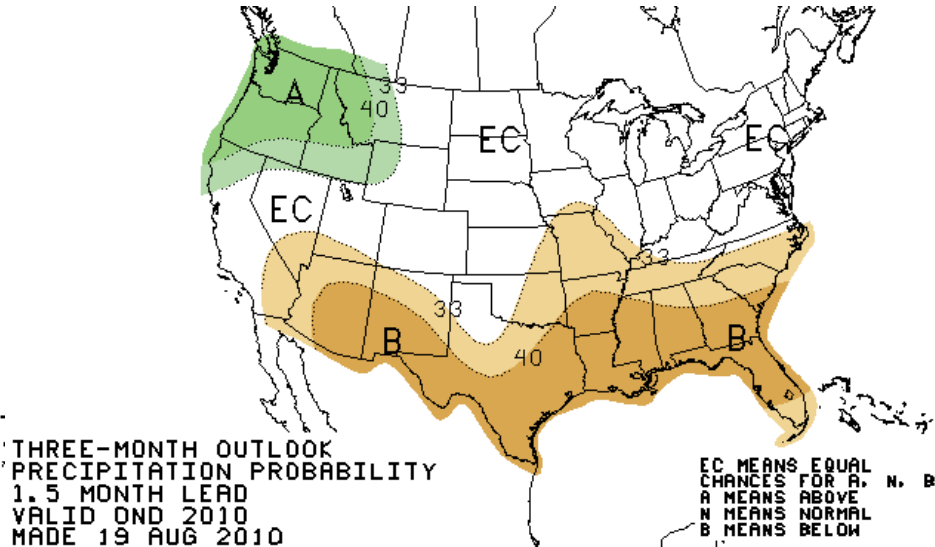
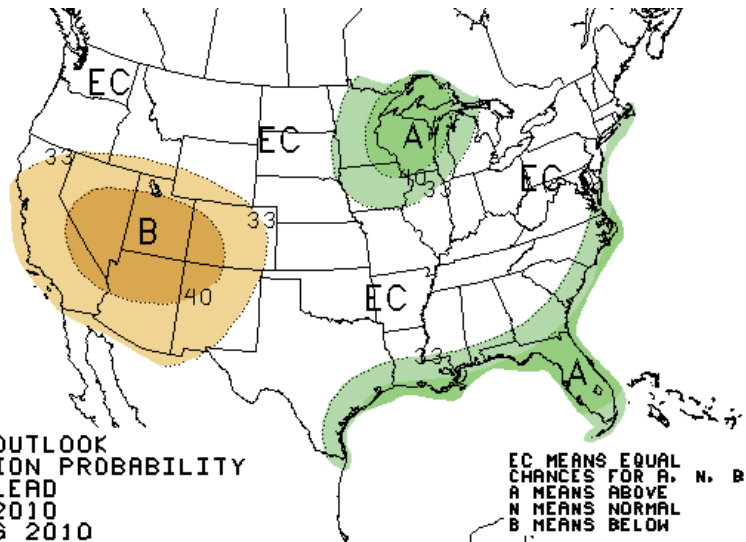
12-Jan-10 Baseflow release per LORS-2008: S79 < 650 cfs & S80 = 0 cfs targeted for 11-days
21-Jan-10 Baseflow release ended (S77 & S79 closed)
27-Jan-10 Start USACE Baseflow release to CE per LORS-2008 (650 cfs @ S79) for 11-days.
7-Feb-10 Baseflow release ended (S77 & S79 closed)
13-Feb-10 Start USACE Baseflow release to CE per LORS-2008 (650 cfs @ S79) for 14-days.
27-Feb-10 Baseflow release ended (S77 & S79 closed)
2-Mar-10 Start USACE Pulse release to CE per LORS-2008 (800 cfs @ S79) for 21-days.
15-Mar-10 Pulse release ended (S77 closed due to rain)
27-Mar-10 Pulse release per LORS-2008: S79 <= 2,200 cfs & S80 <= 950 cfs targeted for 13-days.
9-Apr-10 Continue Pulse release: S79 <= 2,200 cfs & S80 <= 475 cfs targeted for 13 more days.
3-May-10 Increase release per LORS-2008: S77 <= 4,000 cfs & S80 <= 1800 cfs.
22-May-10 Decrease to pulse release per LORS-2008: S79 <= 3,000 cfs & S80 <= 1,170 cfs.
1-Jul-10 Decrease to base flow release per LORS-2008: S79 <= 450 cfs & S80 <= 200 cfs.
11-Jul-10 Increase release per LORS-2008: S77 <= 4,000 cfs & S80 <= 1800 cfs.
23-Jul-10 Decrease to pulse release per LORS-2008: S79 <= 2,000 cfs & S80 <= 730 cfs.
6-Aug-10 Decrease to base flow per LORS-2008: S79 <= 450 cfs & S80 <= 200 cfs
7-Sep-10 Baseflow continues per LORS-2008: S79 <= 450 cfs & S80 <= 200 cfs
25-Sep-10 Baseflow redistributed per LORS-2008: S79 <= 650 cfs & S80 = 0 cfs
5-Oct-10 Baseflow reduced: S79 <= 450 cfs & S80 = 0 cfs
15-Oct-10 Baseflow reduced per Lake O Adaptive Protocol: S79 =0 & S80 =0

U. S. Seasonal Precipitation Outlook

National Climate Prediction Center (CPC)

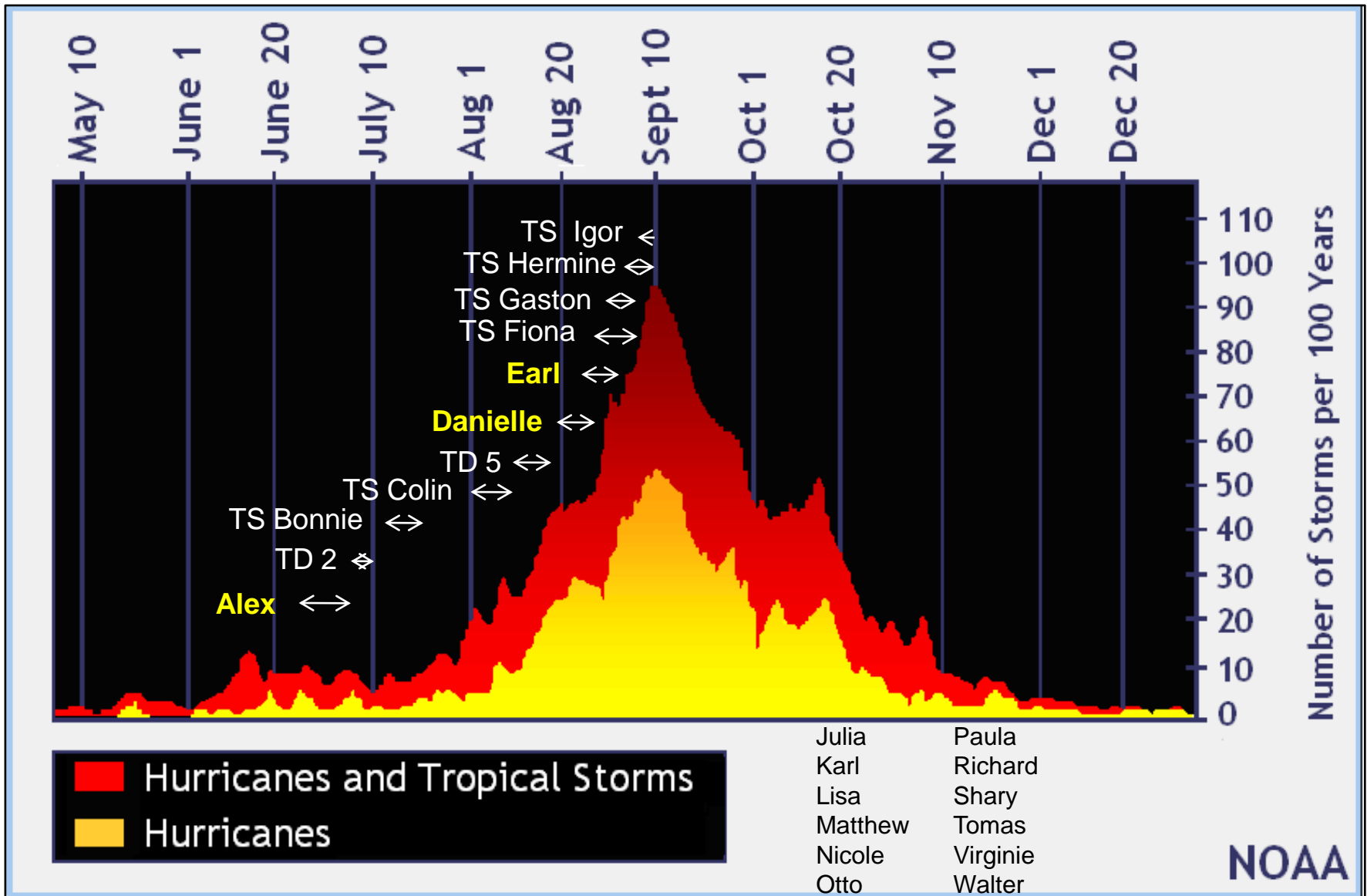
September

Oct-Dec



- La Nina conditions are expected to continue through the remainder of the hurricane season and into the 2010-2011 dry season.
- Currently the tropical Atlantic sea surface temperatures are at record warm levels for this time of the year in the main hurricane-developing region. Revised predictions for the Atlantic hurricane season continue to forecast a high likelihood of an above-average hurricane season.
- The current outlook for September shows increased chances of above-normal rainfall for central and southern Florida.
- The current outlook for Oct-Dec shows increased chances of below-normal (B) rainfall
- For the 2010-11 dry season, outlooks are for increased chances of below-normal (B) rainfall

2010 Tropical Activity



Questions?



Water Conditions Summary

Lake Okeechobee - Lake Okeechobee is at 14.09, (+0.01 ft from last week), 0.27 ft below period of Records Average and 0.22 ft below 2009 level

Last 7-days Rainfall = 1.48"

Caloosahatchee discharges in the last few days are 0 to 5000 cfs, much greater than the 450 cfs target, due to basin runoff

Lake Kissimmee levels are at the construction deviation line. Its outflows have been decreased back to about 300 cfs.

No water supply deliveries to the EAA at S351, S352 and S354

No releases from WCA1 (S39), and WCA3 (S337) to the East Coast. Limited releases (less than 400 cfs, when occurring) to the East Coast from WCA2 at S38.

S10s, S11s are closed - S12s open per IOP. S333 closed (Angel's well = 6.98 ft NGVD).

2004-05 SFWMD Aerial Photography
2009 Monroe County Aerial Photography

© 2007

2008 LORS

Part C: Establish Allowable Lake Okeechobee Releases to the Water Conservation Areas

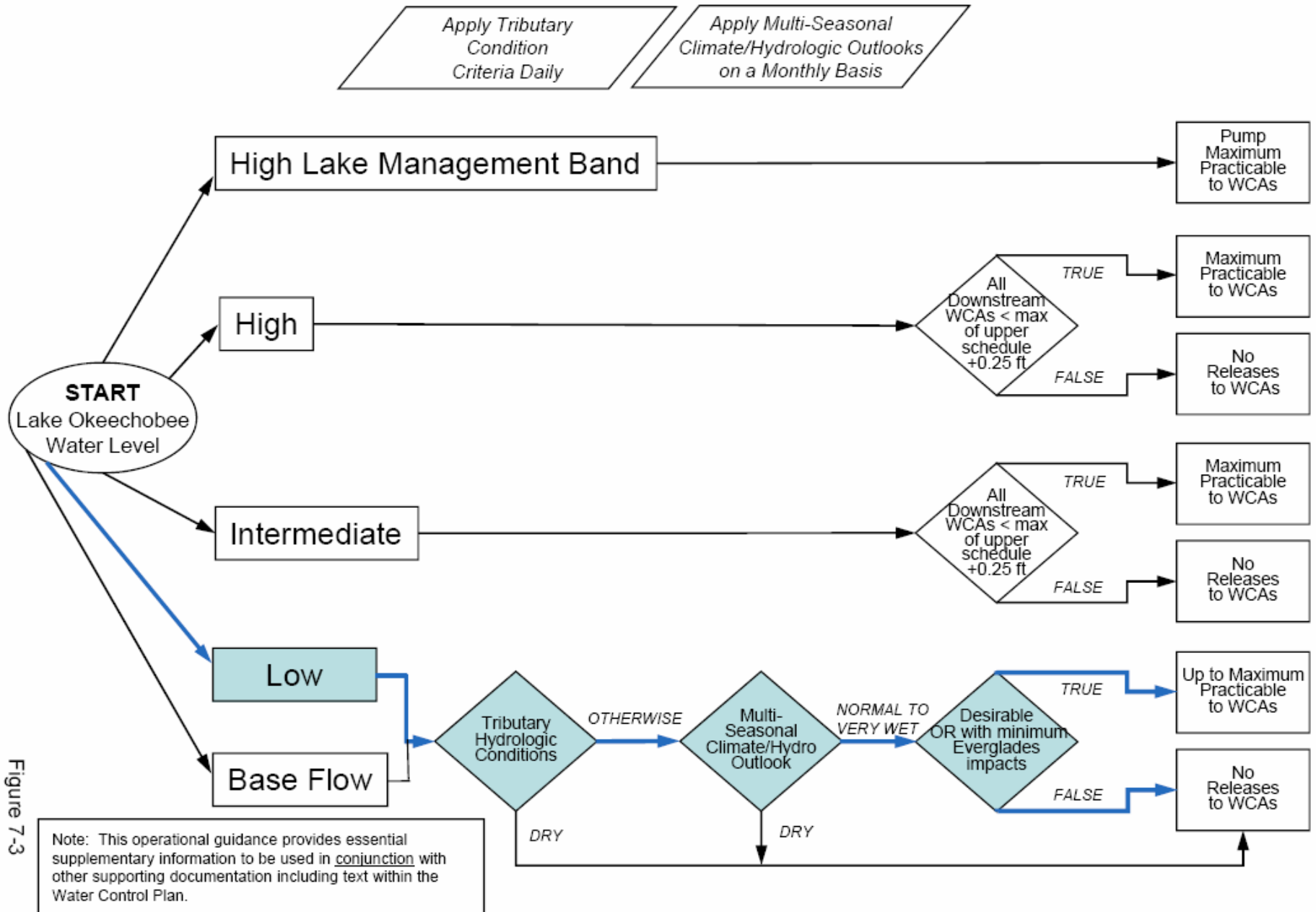


Figure 7-3

2008 LORS

Part D: Establish Allowable Lake Okeechobee Releases to Tide (Estuaries)

Note: This operational guidance provides essential supplementary information to be used in conjunction with other supporting documentation including text within the Water Control Plan.

When conducting Base Flow releases, flows can be distributed East and West up to 650 cfs as needed to minimize impacts or provide benefits through S-80 and S-79

Apply Meteorological Forecasts on a Weekly Basis; apply Seasonal and Multi-Seasonal Climate/Hydrologic Outlooks on a Monthly Basis

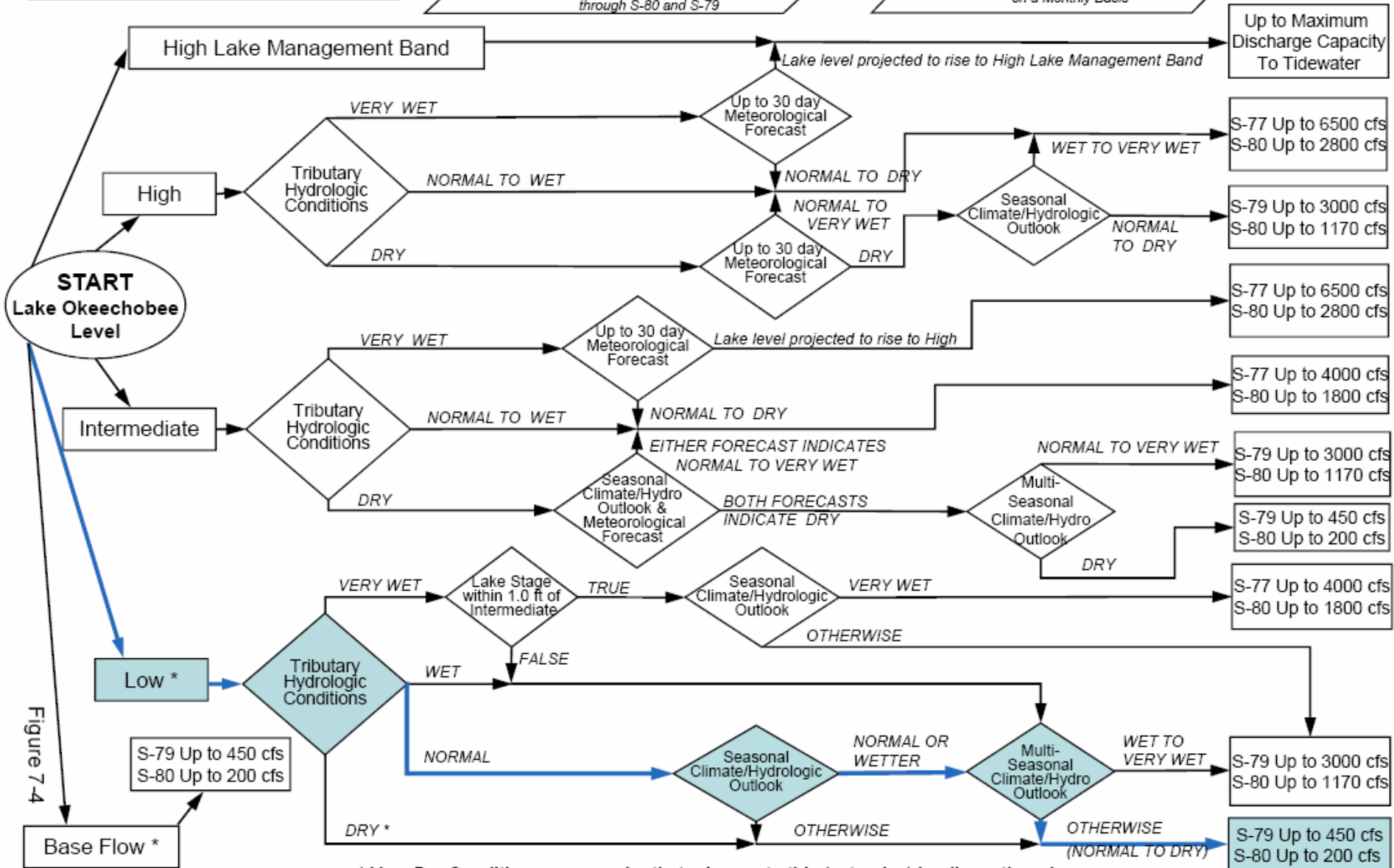
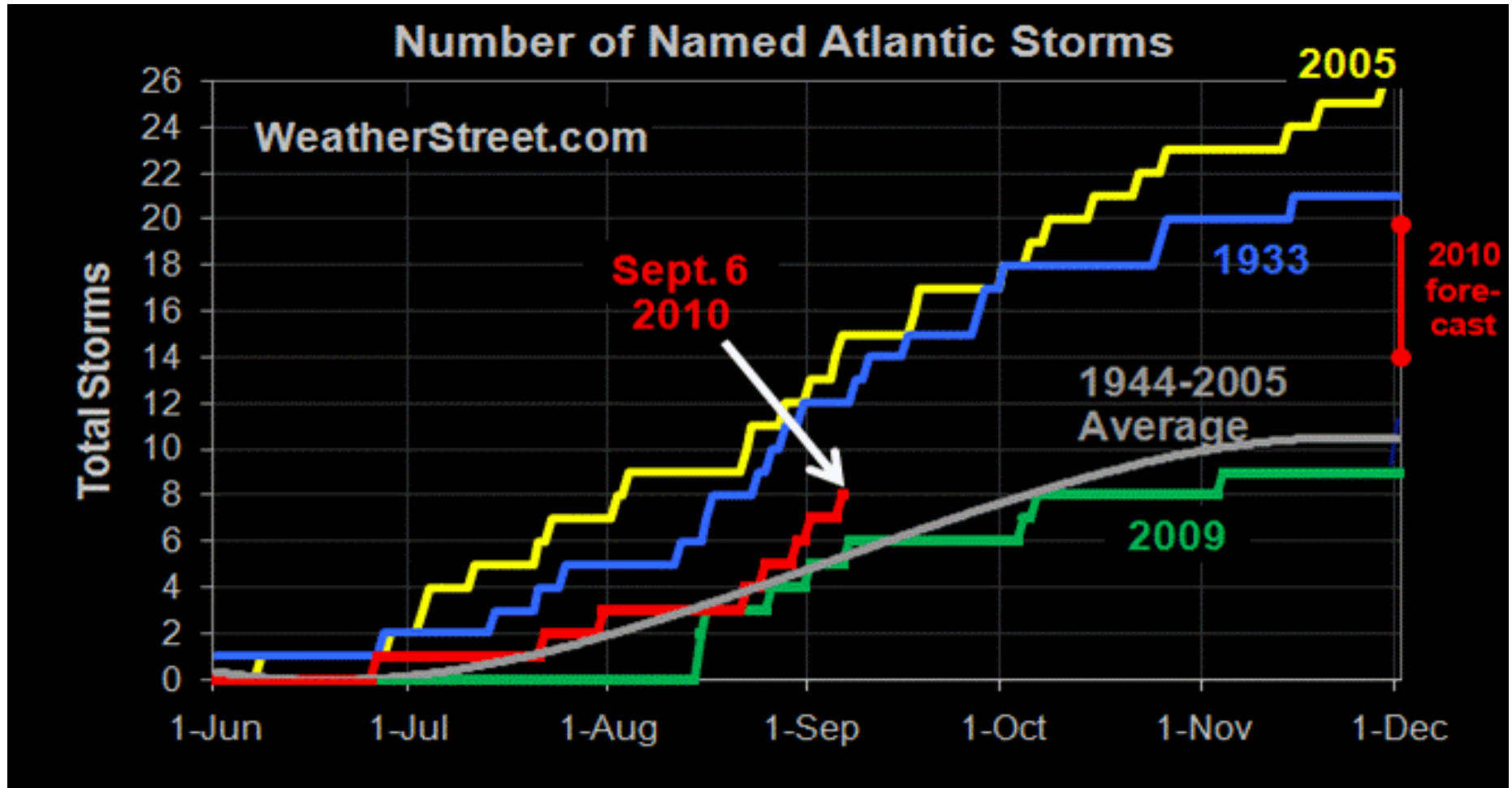
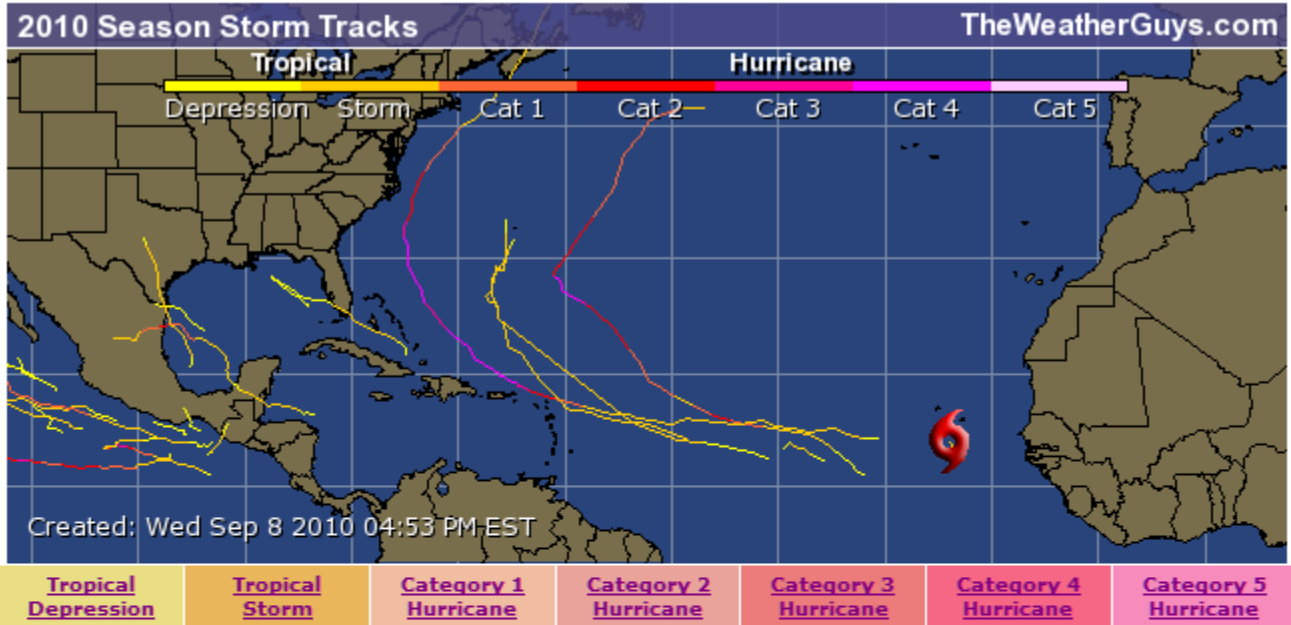


Figure 7-4

Accumulation of the Number of Tropical Storms with the Progression of Tropical Season for a few select Years



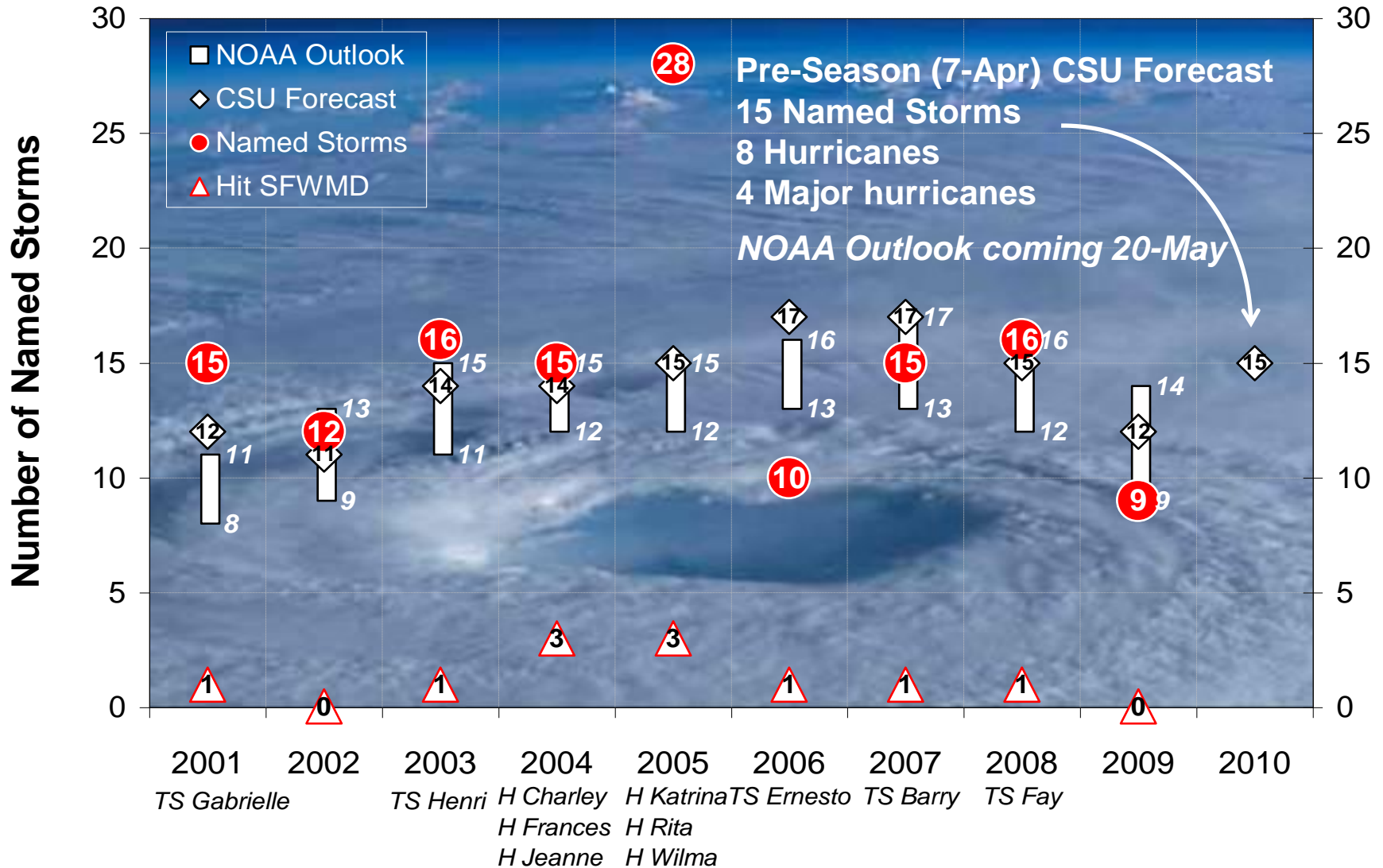
<http://www.weatherstreet.com/hurricane/2010/Hurricane-Atlantic-2010.htm>



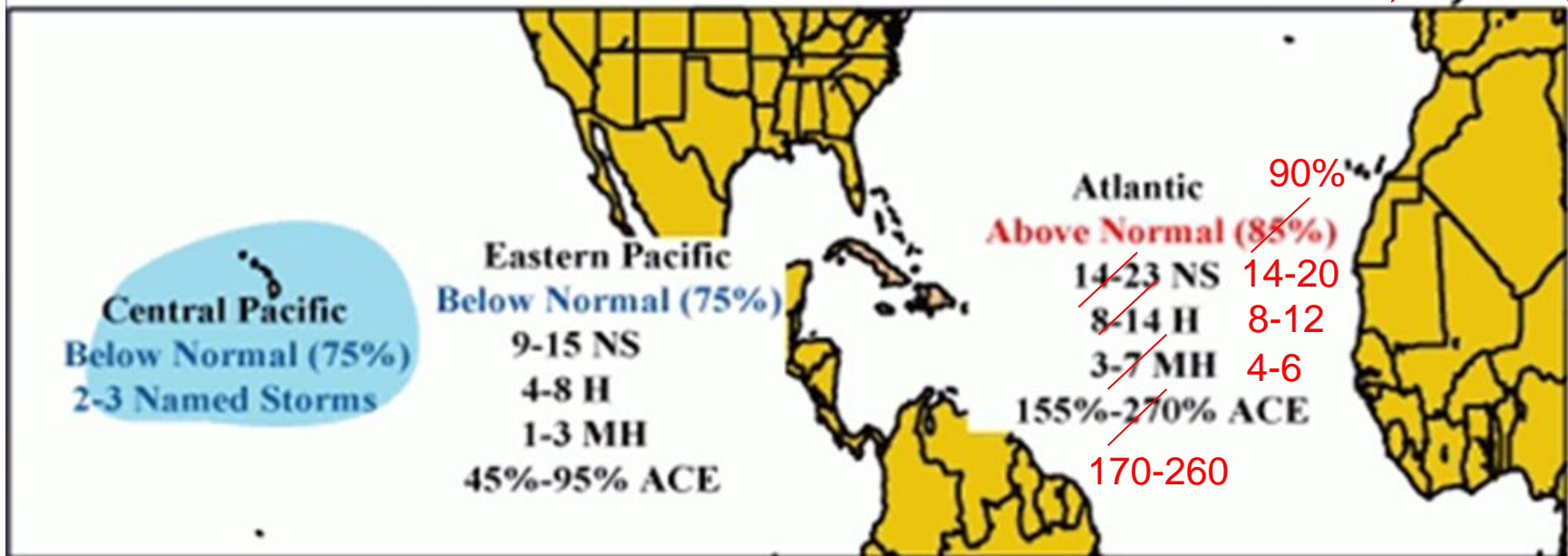
ATLANTIC TROPICAL SYSTEMS		
System Name	Status	Last Advisory Date (UTC)
HURRICANE ALEX	Not Active	0300 UTC FRI JUL 02 2010
TROPICAL DEPRESSION TWO	Not Active	2100 UTC THU JUL 08 2010
TROPICAL STORM BONNIE	Not Active	2100 UTC SAT JUL 24 2010
TROPICAL STORM COLIN	Not Active	2100 UTC SUN AUG 08 2010
TROPICAL DEPRESSION FIVE	Not Active	2100 UTC WED AUG 11 2010
HURRICANE DANIELLE	Not Active	0300 UTC TUE AUG 31 2010
HURRICANE EARL	Not Active	0300 UTC SUN SEP 05 2010
TROPICAL STORM FIONA	Not Active	0300 UTC SAT SEP 04 2010
TROPICAL STORM GASTON	Not Active	2100 UTC THU SEP 02 2010
TROPICAL STORM HERMINE	Not Active	0300 UTC WED SEP 08 2010
TROPICAL STORM IGOR	Active	2100 UTC WED SEP 08 2010

Atlantic Hurricane Season

Named Storms - Observed vs Pre-Season Outlooks



NOAA's 2010 Hurricane Season Outlooks Issued in May ~~Aug.~~



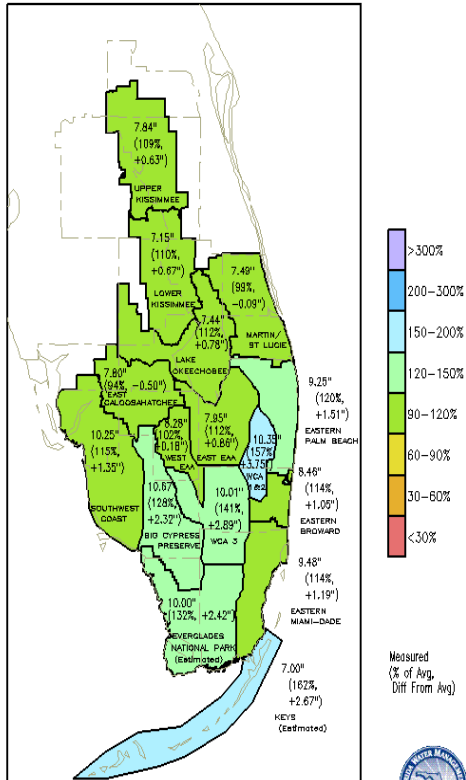
NOAA's 2010 seasonal hurricane outlooks indicate the likely ranges (each with a 70% chance) of Named Storms (NS), Hurricanes (H), Major Hurricanes (MH), and percentage of the median Accumulated Cyclone Energy (ACE).

For 2010 the probabilities of each season type are:

	Atlantic 90%	Eastern Pacific 0%	Central Pacific 75%
Above Normal	85%	5%	5%
Near Normal	10%	20%	20%
Below Normal	5%	75%	75%

August

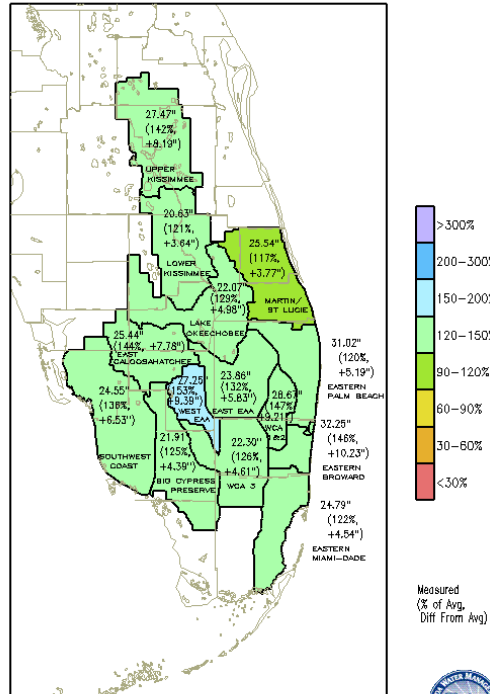
SFWMD Rainfall
02-aug-2010 to 01-sep-2010



GADS: COLA/ICES

Dry Season

SFWMD Rainfall
02-NOV-2009 to 01-JUN-2010

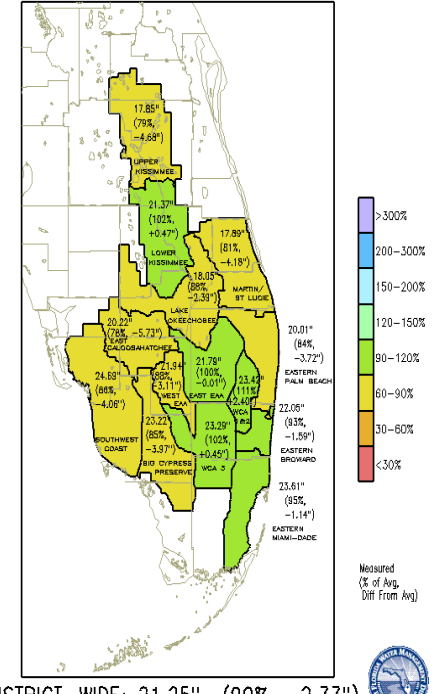


GADS: COLA/ICES

Wet Season

Up to Sept 06

SFWMD Rainfall
02-JUN-2010 to 06-SEP-2010

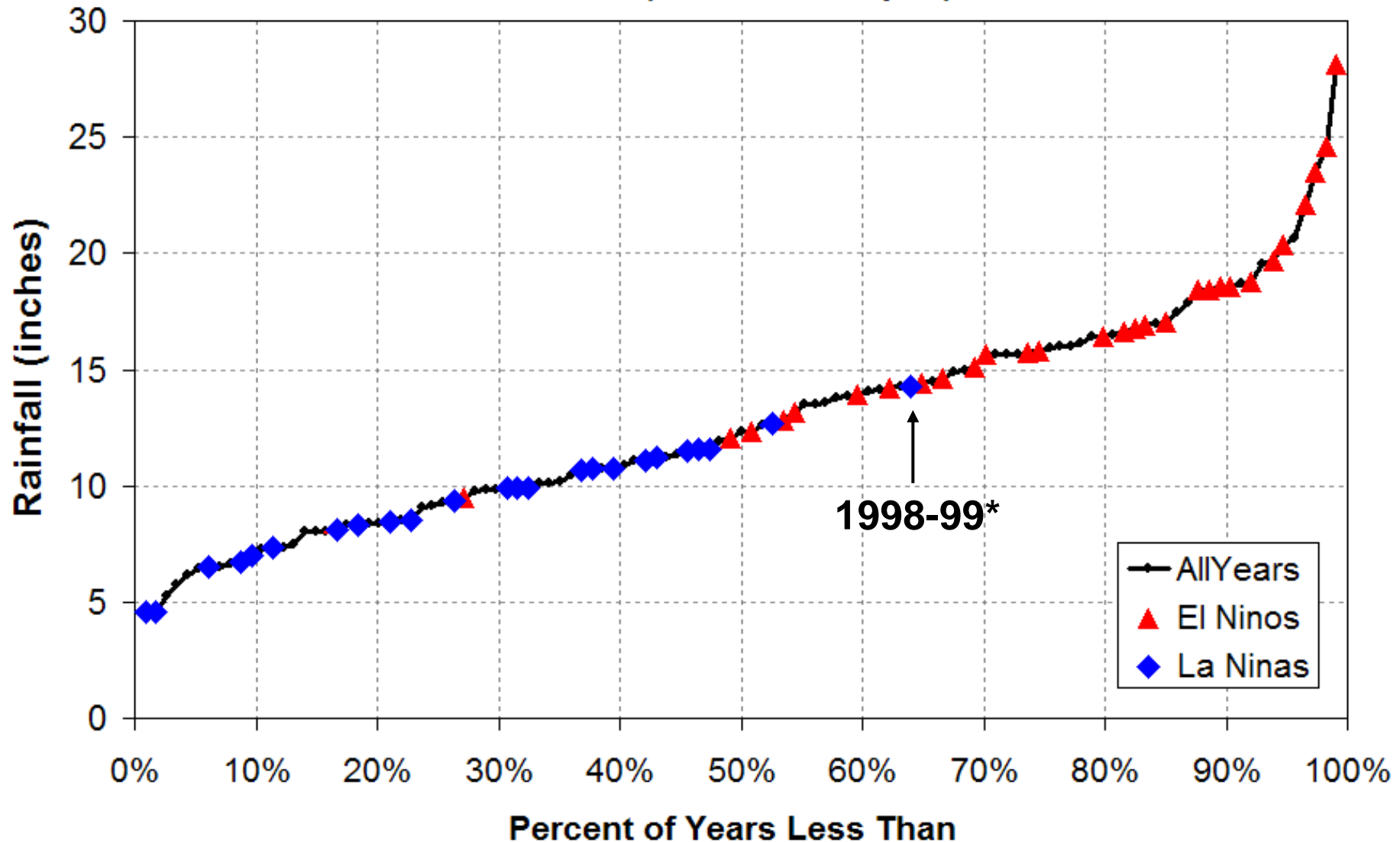


GADS: COLA/ICES

2010-09-06-19:02

Historical SFWMD Dry Season Rainfall

1896-2008 (November-April)



* Heavily influenced by T.S. Mitch in Nov 1998 (5.6")

Questions?

